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RAILWAY AGE

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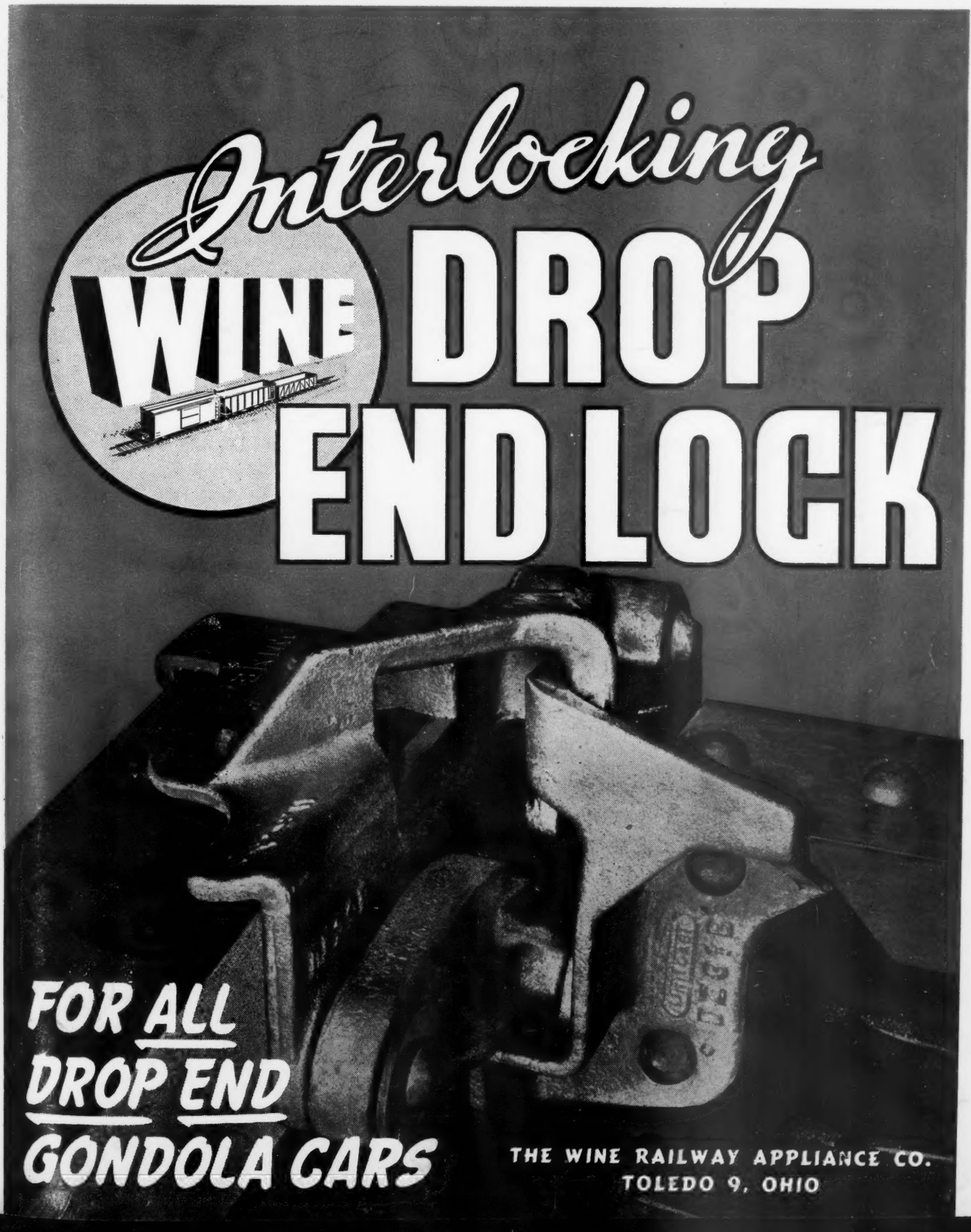
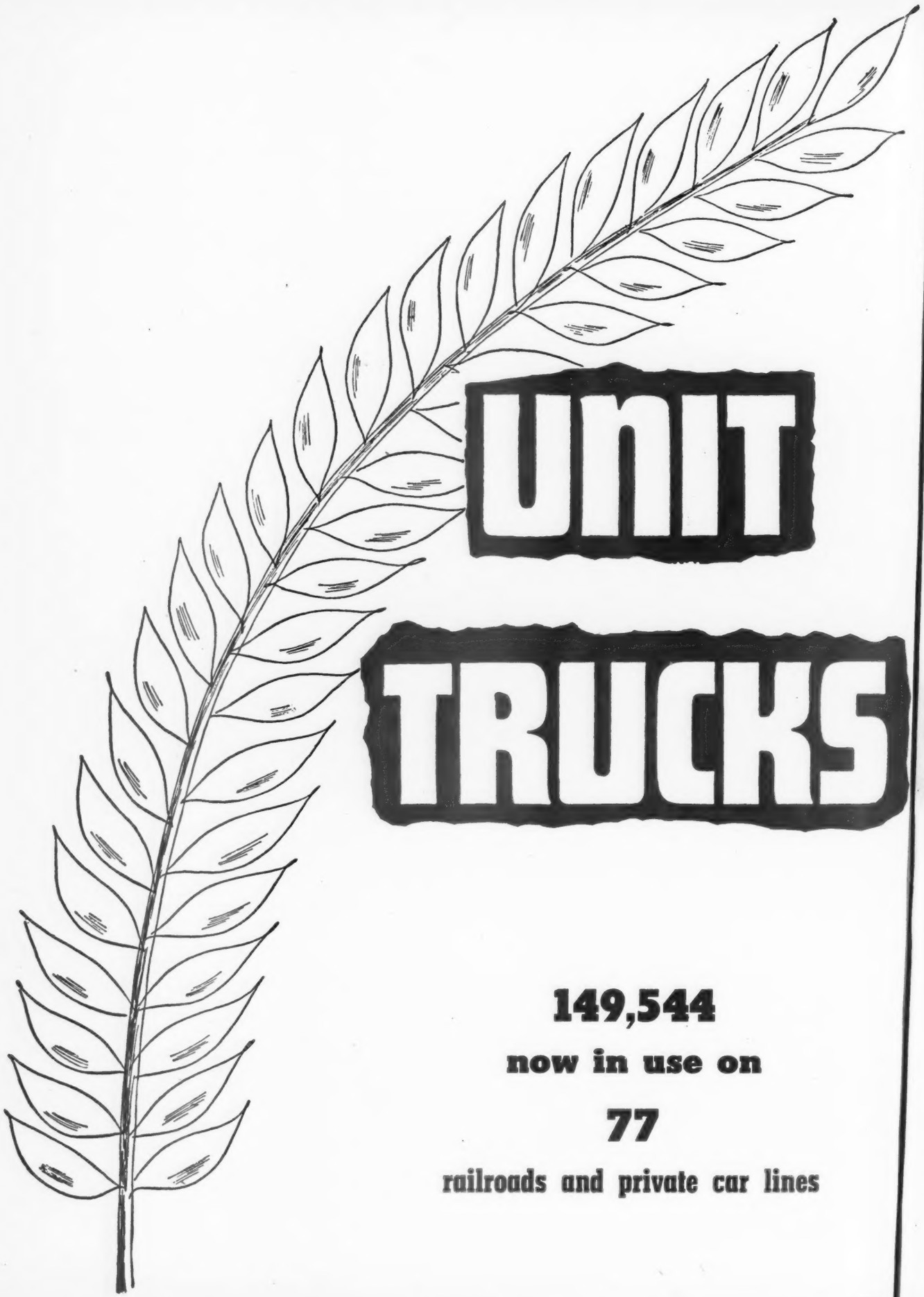
Interlocking

WINE DROP END LOCK



FOR ALL DROP END GONDOLA CARS

THE WINE RAILWAY APPLIANCE CO.
TOLEDO 9, OHIO



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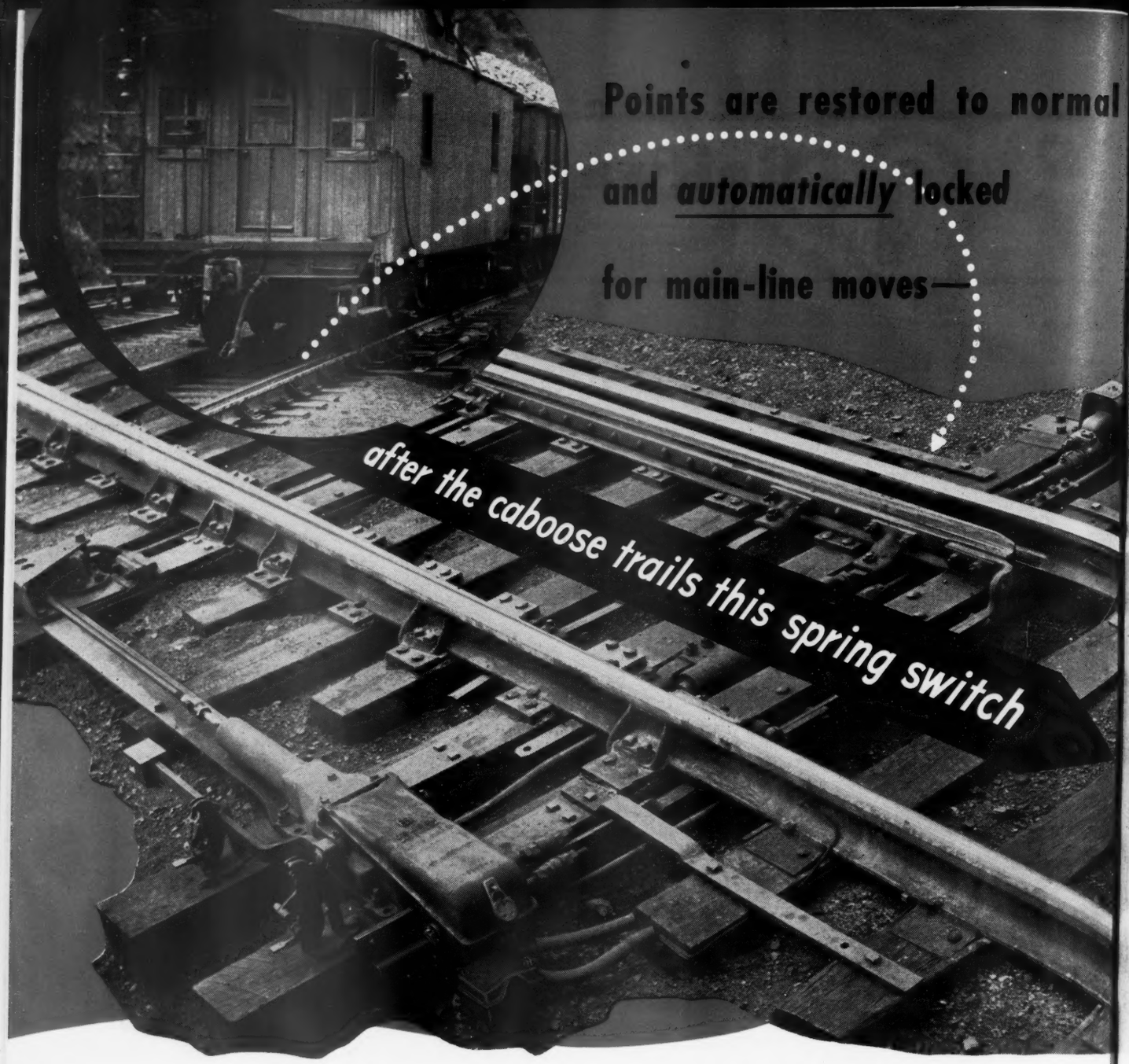
Points are restored to normal
and automatically locked
for main-line moves—
after the caboose trails this spring switch

To ELIMINATE slow orders at spring switch locations and expedite traffic with safety, many railroads are installing "Union" Mechanical Facing Point Locks to provide the equivalent of interlocking protection for main-line train movements.

Trailing moves against the closed point are made at speeds consistent with the turnouts employed. When a train trails a switch, the flexing of the switch points causes the automatic unlock of the lock rod to permit the trailing movement.

After the train has cleared the spring switch, the points are returned to their normal position and a powerful spring restores the locking plunger of the mechanical facing point lock in the notch of a standard lock rod. A built-in circuit controller checks the locking plunger and the points of the switch to insure that they are in their proper positions for the safety of subsequent train movements.

UNION SWITCH & SIGNAL COMPANY

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The Week at a Glance

TOWARD PROSPERITY?: Estimates of how many highways, automobiles, waterways, washing machines, modern apartments and other gadgets which the people would like to have if they did not have to pay for them are not likely to reveal anything of what the future is likely to hold for the American economy. Yet that was the approach of a group of researchers under the sponsorship of the Twentieth Century Fund, which has just turned out a 3 lb. 11 oz. book, entitled "America's Needs and Resources." The issue's leading editorial comments on the work, indentifying many of the research group as bureaucrats on the government payroll and the sponsoring organization as a privately financed institute with New Dealish leanings. It goes on to warn that the large government expenditures which the authors predict may lead, not to national prosperity but to an unprecedented depression—for dependable prosperity, if it is attained, will come from the success of that patriotic part of Congress which is seeking to reduce taxes and government spending and chase out of Washington the kind of thinking and the type of government personnel which produced the 3 lb. 11 oz. book.

●

RADIO ON D. M. & I. R.: The Duluth, Missabe & Iron Range has installed inductive radio train communication for use on all freight trains operating over its Missabe division which extends west and north from Duluth, Minn., to mines on the Mesabi range. The system, described in an illustrated feature article herein, does not supplant any dispatching arrangements; it is used primarily to convey information which will aid in getting trains out of yards promptly, in reducing the number of stops en route, and in minimizing delays if stops are necessary. It has also been found valuable for the reporting of defective track conditions and for service as an emergency means of communication during failures of telegraph and telephone line circuits.

●

HIGHWAY PLAN: Routes selected for the "national system of interstate highways" have been announced and mapped by the Public Roads Administration. A glance at the map, published in this issue's news section, will indicate the windfall of improved facilities in store for railroad competitors. The new system, following in general the present federal-aid system, extends over 37,681 route miles. It consists of north-and-south, east-and-west and diagonal routes which will reach 42 state capitals and serve directly 182 of the 199 cities in the country having a population of 50,000 or more. Additional "urban circumferential and distributing routes" are yet to come.

●

"SUNLINER" CARS: Ten "Sunliner" passenger cars have been delivered by the American Car & Foundry Co. to the Central of Georgia. They are assigned principally to "The Nancy Hanks II," the train inaugurated last month as a new service on the 294-mile run between Atlanta, Ga., and Savannah. The window and lighting arrangement, utilizing fixed Day-flector vanes between glass for the coach sections is a new A. C. F. development, while other interesting features are the arrangement and equipment of the washrooms and the layout of eating facilities in the grill-lounge car. The equipment is described in an article appearing on page 52.

●

FIRST HALF'S NET: Class I roads in the first six months of this year had an estimated net income of $204 million, the net railway operating income having been $368 million. Better than 1946's first half when the respective figures were a deficit of $21 and N.O.I. of $155 million; but still short of the required 6 per cent return. For the 12 months ended with June the rate was only 3.69 per cent.

●

MONON CENTENARY: The Chicago, Indianapolis & Louisville is 100 years old, and New Albany, Ind., where it all got started in 1847, recently went all out on a four-day birthday celebration. "There never was anything like it in Indiana before" is the way our reporter describes the festivities which wound up with a three-hour parade and an outdoor buffet dinner addressed by Monon President John Barriger and Governor Ralph Gates of Indiana. The story appears on page 67.

●

PER DIEM ORDERED UP: The I. C. C. has ordered the per diem rate for rental of freight cars (other than tank or refrigerator cars) increased from $1.25 to $2, effective for six months from October 1. The order comes at a time when railroads are voting on a recommendation of the A. A. R. board of directors that the rate be increased to $1.50, effective September 1. The commission's report is reviewed in one of this issue's feature articles.

●

CAR SERVICE RULES: The same article covers another commission report on its investigation of car service. While that decision conceded that the A. A. R.'s car-service rules had not been shown to be unlawful, it nevertheless went on to find that the railroads as a group have failed to furnish adequate car service. And it ordered the carriers to file their car service rules and regulations with the commission which will hold the proceeding open "for such further action as may be warranted."

●

FED UP WITH WRINGER: Senator Clyde Reed of Kansas is "fed up" with the I. C. C.'s administration of Section 77 of the Bankruptcy Act. He is ready to "impeach" the commission "if necessary" to ease turns of its reorganization-plan wringer which is still squeezing out railroad stockholders. The senator expressed his indignation at a recent press conference called to announce that the Senate interstate commerce subcommittee which he heads will proceed with public hearings on the commission's practices.

UNIONISM'S POTENTIAL: Professor Sumner N. Slichter of Harvard is one of the foremost among competent academic scholars who have been studying labor unions and industrial relations dispassionately and objectively. His mature conclusions on how to make unionism serve the public interest are summarized in his recently-published book, "The Challenge of Industrial Relations," which is reviewed in one of this issue's feature articles. The reviewer found on practically every page valuable and helpful information for every American who is observant enough to realize that either the sand must be removed from the bearings of labor relations or the degeneration of our republic into some form of authoritarianism cannot be arrested. He also found statements which will challenge "accepted" opinions of both management and union adherents; and "plenty" which is applicable to labor relations on the railroads.

●

MODERN COACH SHOP: All repair and maintenance work on Rock Island passenger cars is now being done in the modern Chicago shop which was completed early this year as part of the road's general program for improving its facilities in that city. The new layout, described in one of this issue's illustrated feature articles, gathers under one roof all coach-repair facilities except those of the nearby truck shop which is also new. Substantial savings are being realized as compared with costs of operating the former facilities, which were housed in several buildings, most of them built in 1868 when wood coaches were standard equipment.

●

WAGE CASE: The six-man arbitration board, which has been chosen to pass on the non-operating employees' demand for a 20-cents-per-hour wage increase, began hearings in Chicago August 4. The "neutral" members—Dr. William M. Leiserson and Robert D. Calkins—were chosen chairman and vice-chairman, respectively. Labor's opening presentation contended that the non-ops' productivity has increased while their wages have lagged behind those in other industries. Also, that the board should disregard ability-to-pay considerations, leaving that matter to the I. C. C.

●

CAR-BUILDING PROGRESS: Another conference of car-building, railroad, and steel company representatives was held in Washington last week. Like the previous meeting in February, it was called by Senator Clyde Reed who had been concerned over the failure of July production to reach the 7,000-per-month rate which had been expected. The meeting pointed up the fact that "unbalanced inventories" have been the principal cause of the trouble, since the steel industry, in general, had made good on its commitment to deliver the total tonnage required. The outcome was an understanding that Director Johnson of O. D. T. will act as "coordinator" in an undertaking to effect the right distribution of specific materials to builders and railroad shops.

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Greatest in

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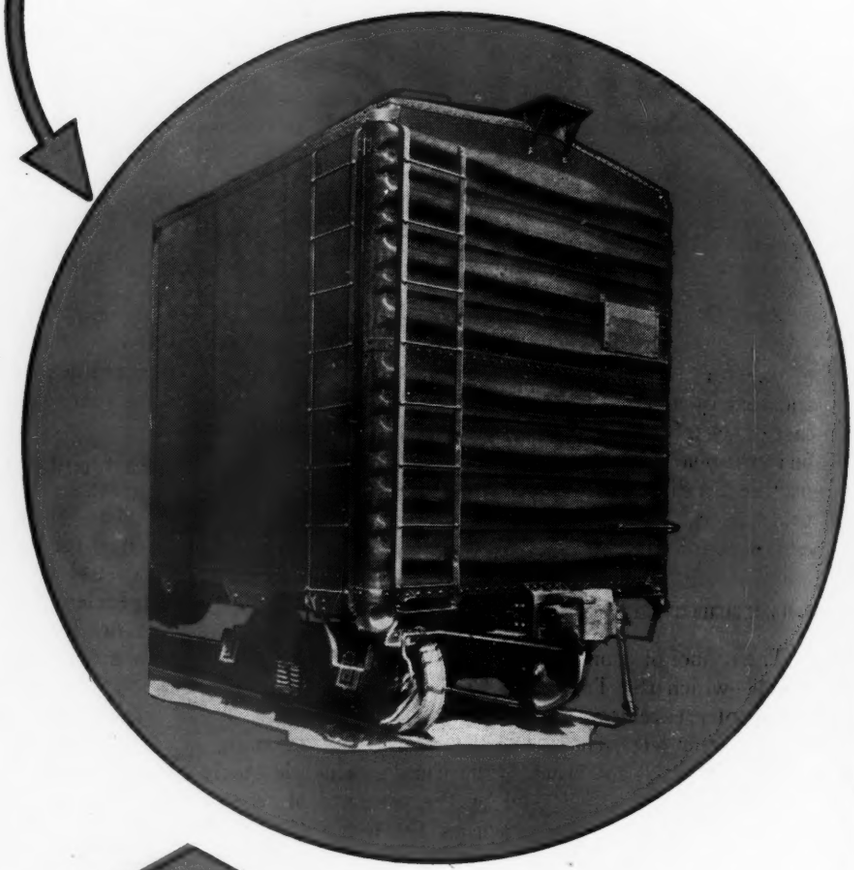
- Resiliency
- Durability



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RAILWAY AGE

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Are We Headed Toward Prosperity, and if so How?

A group of researchers under the sponsorship of the Twentieth Century Fund—a privately financed institute with New Dealish leanings—has turned out an 812-page book, weighing 3 lbs. 11 oz. and selling for $5, entitled "America's Needs and Resources," in which a gaudy economic future is predicted for this republic, but for reasons which are not persuasive. The method the researchers have employed consists, in effect, of estimating how many highways, automobiles, waterways, washing machines, modern apartments and other gadgets the people would like to have if they did not have to pay for them. They take a total of such estimates and that provides them with their most optimistic forecast of what national income and production is likely to be in the years ahead. Their estimate of minimum prospective production and income is based on projecting pre-war trends of various industrial and governmental activities into the future.

Government Spending for Transport

The school of economics—if it can be dignified by that name—which the Twentieth Century Fund espouses is sufficiently revealed by the fact that Stuart Chase, the highly articulate crusader for government "planning" and government spending, is the Fund's principle oracle on economic questions; and by the presence of several well known New Deal names on the list of "experts" who prepared the volume. Among the trustees of the Fund are Adolph Berle and Francis Biddle. Many of the chapters in the book are written by bureaucrats on the government payroll.

In examining the prospects for transportation the authors take a rather dim view of the future of the railroads. They give figures indicating that government outlays for *capital* expenditures on fixed plant for transportation averaged $1 billion annually in the decade before the war, while those of private enterprise are reported to have averaged only $300 million—with an additional $1.5 billion annually of private capital expenditures for equipment. By 1950 the authors estimate annual public capital expenditures on transportation fixed plant at approximately $1.3 billion and those of private enterprise at only $425 million (in terms of 1940 dollars).

A rather somber view of railroad prospects is, of course, justified if a government policy of providing, for free, unlimited amounts of competing transportation facilities is accepted uncritically. But such a development would not jibe with a rosy forecast of economic prosperity for the country—because people do not become richer, but they become poorer, when they abandon economical ways of doing things in favor of ways which are more costly in labor and capital.

Railroads, Too, Have "Needs"

The study arrives at figures for the "needs" of the public for transportation facilities provided at taxpayers' expense from estimates supplied by such government agencies as the Public Roads Administration and the Army Engineers, which have a selfish personal interest in maximizing such expenditures. If the authors had obtained their figures of the "need" for improved railroad fixed property by asking the chief engineers of the railroads how much they would like to spend if the taxpayers were paying the bill, doubtless they would have got some comparative figures on the relative expenditures likely to be made in improving the nation's transportation plant quite different from those published in this book. But such an approach would have been logical and consistent, which are attributes scarcely to be expected from protagonists of "spend-ourselves-rich" theories.

The authors' minimum estimates on probable future production are based on what they call "demand", which is, generally speaking, merely a projection of the trend of pre-war outlays. In transportation in the decade before the war, the bulk of such fixed-plant expenditures were made by government. That is, they were expenditures based on political considerations—not on economics. In economics *demand* is a force which is depen-

dent, not simply on desire—but on desire coupled with willingness and ability to defray the costs of the thing desired.

Nobody knows what the economic demand is for airports, highways and waterways—because the costs are levied only in part or not at all on the people who desire them. The economic demand for such facilities never can be known until all the costs of providing them are assessed against the users; and, until this "user-pays" test is applied, it can never be known whether the country is made wealthier or poorer for the provision of all these airports, waterways and highways.

Road to Depression

The authors of this book have actually done nothing more than amass a lot of figures on past production, with some opinions regarding what people would like to have if they did not have to pay for it. Such figures do not of themselves reveal anything of what the future is likely to hold for the American economy. The driving force in economic life, and which will determine whether it is to progress or recede, comes from the incentive afforded to private investors and business men to enlarge and expand their operations. The authors of this book predicate much of the large-scale production which they foresee upon continued enormous government expenditures—but they do not attempt to measure what the effect of government profligacy may be upon the attitude and outlays of private investors who will have to pay in taxes for the generosity of the public-spenders. It is certainly possible that the large government expenditures these authors predict and favor would lead, not to national prosperity, but to an unprecedented depression.

A prosperous future for the country, including railroads, is possible—and, barring war, is even probable, but not because of the "needs" of a lot of people for things they would refuse if they had to pay for them; and not because of the likelihood that the trend of governmental expenditures initiated in the tragic decade of the New Deal will continue. Instead, dependable prosperity, if it is attained, will come from the success of that patriotic part of Congress which is seeking to reduce taxes, to reduce government spending, and to chase out of Washington the kind of thinking and the type of government personnel which have contributed so largely to the production of this volume by the Twentieth Century Fund.

Rivals Make Good Partners

The old chestnut about two heads being better than one is particularly applicable to the vexing problem of freight loss and damage, because the effect of research and publicity in this field has a way of increasing in geometric proportion as the number of interested parties increases arithmetically. There was a time only the carriers worried about the problem. Then along came the April Perfect Shipping Month campaign a dozen years ago, and now the members of the shippers' advisory boards make much—and effective—ado about good packing and shipping. There remains another party to add to the company in the interest of all concerned—the trucking industry.

This proposed partnership of transportation agencies which in some of their operations complement each other, but elsewhere are often bitter rivals, is not as incongruous as may appear at first. It is already in effect in one advisory board territory and was proposed by the members of the Mid-West board at a recent meeting in Milwaukee, Wis. The partnership would mean simply that the local committees on freight loss and damage already set up by the regional units of American Trucking Associations, Inc., be invited to serve the loss and damage prevention committees of the boards in an advisory capacity, as have the operating and traffic officers of the railroads ever since the committees were formed. Truckers have participated in the boards' Perfect Shipping campaigns for several years. It is neither necessary nor desirable that the motor transportation men be admitted to the boards as members—as is now the case on one board—especially in view of the fact that the railroaders are not voting members of any board.

The advantages of such a "marriage of convenience" are important enough to overcome any qualms the representatives of either industry may have regarding mutual labors in the vineyard. The trucking industry will gain easy contact with groups of important shippers already organized and demonstrating a deep interest in the loss and damage problem. It will also share in the advances in research and employee education already made by the railroads in packaging and handling methods. It is no secret that the trucking industry generally lags behind the railroads in this respect. Accurate figures on truck loss and damage claims are not available, but incomplete figures on several large over-the-road operations for a part of 1944 showed a loss-to-revenue ratio as high as 1.07 per cent, compared to the railroad ratio of 0.82 in that year.

From the cooperative effort the railroads will gain, first, the over-all benefits of "spreading the good word". It is certain that better handling of goods by truckmen will aid the railroads cut their claims payments on less-carload shipments accorded a truck pick-up or delivery. Second, the experience of the trucking industry in the handling of small-lot shipments, which constitute the bulk of its traffic, may prove valuable to the railroads in reducing the extraordinary ratio of loss and damage on their own l.c.l. traffic—in 1944, $4.71 per $100 of revenue, compared with $0.78 per $100 of revenue for all freight traffic, and in 1945, $5.80 compared with $1.09 for all freight. Put otherwise, less-carload traffic, which constituted but 5.6 per cent of total railroad freight revenues in 1945, accounted for almost 30 per cent of loss and damage payments.

Shippers will gain the convenience of making the contact with both forms of transportation at one stroke, without the necessity for double meetings and prevention campaigns. Generally speaking, the leaders among the shippers who give their time and effort to loss reduction work are a relatively limited group. Very likely, without joint programs, the same men would have to give their time to the trucking industry in activities which would duplicate their association with the railroad prevention committees.

Public Interest In Apprenticeship

Courses of classroom instruction for apprentices in the various shop crafts have been inaugurated recently by the Union Pacific, the New York Central and Western Pacific which are worthy of notice for several reasons. For one thing, the courses of instruction are separate for each craft. A common tendency in this respect has been to use a maximum of common instruction material and a minimum of material selected for its specific value to the individual craft. Six crafts—machinists, boilermakers, blacksmiths, sheet-metal workers, electricians, and carmen—will each receive instruction in a separate class. This is also one of the early cases in which the problems of apprenticeship are under the guidance of a general apprenticeship committee on which management and unions are both represented. Sharing in the formulation of the plan as consultants were the Nebraska Department of Vocational Education and the Supervisor of Industrial Education of the local school system.

These programs carry out the basic policy of the Apprentice-Training Service established by the Department of Labor under an act of Congress passed in 1937.

This basic policy is that programs for the employment and training of apprentices should be jointly developed and mutually satisfactory. A committee representing management, unions, and a number of interested Government agencies, known as the Federal Committee on Apprenticeship, serves to formulate policy and to establish standards of selection and training. State Councils, representative of the same groups and interests, are being established by request of the national service. National trade joint committees have also been established by some employers' associations and trade unions to develop national trade apprenticeship standards, and the work of the national and state groups has been directed toward arousing interest and active participation on the part of local employers and employees. Where local organizations are lacking dependence is placed on individual plant committees. Through some or all of these voluntary groups the Apprentice-Training Service functions to establish its principles and improve training standards throughout industry.

Thus is being recognized the public interest in effective industrial training at a level of excellence which will insure an adequate supply of all-around mechanics in all of the important skilled crafts. So far as the railways are concerned, the standards will have to be exceptional to equal or improve on those established by several railroads some thirty-five to forty years ago, notable among them, the Atchison, Topeka & Santa Fe and the New York Central. Not only did these systems produce well-educated mechanics but they produced a generation of mechanical-department officers of various ranks who have contributed materially to the elevation of the standards of official excellence in that department.

But there has been a sad sequel to these early apprentice systems which the new incidence of the public interest may remedy. That has been the fair-weather character of the support they have had from management. All too frequently, when for any reason the going got tough, all the carefully built-up systems of shop training and school-room instruction were wiped out, and usually very reluctantly, if ever, completely replaced. If the public interest in the subject succeeds in halting, or even slowing up this tendency it will have justified itself. Apprentice training is vital in the long-term planning on which depends continued health of the industry.

To Pioneer or to Wait for the Bandwagon?

The rate of technological progress in any field depends almost as much on the willingness to give careful consideration to new ideas as it does on the development of such ideas. A new or improved device or method may actually be far superior to present practice but its advantages are of no effect if opportunity is denied to demonstrate them.

For instance, when the idea of butt-welding rails into long lengths in open track was first put forward, the comfortable attitude was to assume that this proposal was impracticable because it did not provide for expansion and contraction arising from changes in temperature. While there may be other difficult problems connected with this practice, which as yet are not solved, there is now little doubt that the effects of temperature changes in long lines of butt-welded rails are not too serious an objection.

Similarly, when the practice of string-lining curves was introduced, the easier approach, rather than viewing this procedure objectively as a potentially valuable tool in track maintenance, was to insist that it was preposterous to believe that a track foreman and a couple of his men, working with a piece of string, a slate and a few other simple tools, could lay out a curve as well or better than an engineering party using expensive surveying instruments. It should be added, parenthetically, that this practice like many another innovation which encountered strenuous opposition in the beginning, is now standard procedure on many large systems.

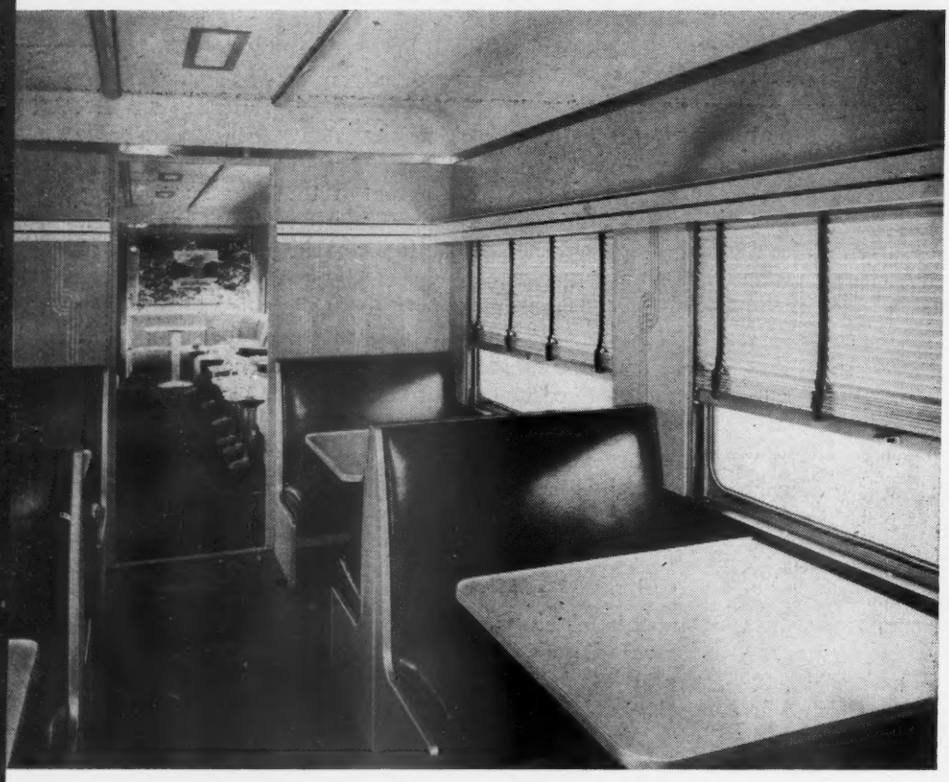
New ideas involving railway track have recently been proposed and are now being discussed. Among these are a number of procedures for lengthening the service life of crossties, some to be applied to new ties and others to ties that have already been inserted in the track. Another proposal involving a radical departure from present practice holds that important advantages may be obtained by adding a certain amount of sand to crushed stone ballast. A third is the development of a synthetic ballast by "cooking" a mixture of sand and clay at high temperatures.

When such proposals are made, deviating widely from present practice, the temptation can be strong to reject them for some superficial reason rather than submit to the discipline of a painstaking and objective analysis of their relative merits. The willingness to make such analyses is a part of the job of developing designs and methods to assure the maximum economy in maintaining tracks and structures. In the absence of such open-minded inquisitiveness there is always the possibility of finding it necessary, possibly with some chagrin, to climb on to the bandwagon after it has already acquired a sizable list of passengers.

Ten cars built by the American Car and Foundry Company equip the "Nancy Hanks II" for Atlanta-Savannah service

Sunlight is directed upwards by Deflector vanes in the upper third of the coach windows. Fluorescent lighting fixtures separate the vanes from the remaining portion of the windows

"Sunliner" Equipment for C. of Ga.



The dining and lounge sections in the grill-lounge car

TEN "Sunliner" passenger cars have been delivered by the American Car and Foundry Company to the Central of Georgia to equip the railroad's new train, "The Nancy Hanks II", inaugurated on July 17 as new service for the 294-mile run from Atlanta, Ga., to Savannah, Ga., and for assignment to other trains as dictated by the traffic requirements. The "Nancy Hanks II" consists of one coach-baggage car, one grill-lounge car, one divided coach and one coach. The other six cars are comprised of three coaches and three divided coaches, both types being exact duplicates of the cars of the same kind used in the four-car train.

Distinctive Design Features

A new development of the American Car and Foundry Company is the window and lighting arrangement utilizing fixed Dayflector vanes between glass, for the coach sections. The vanes extend one-third of the way down from the top of the windows and are separated from the remaining two-thirds position by fluorescent lighting fixtures. These vanes deflect sunlight upwards to the bottoms of the solid baggage racks and to the ceiling which form reflection areas and diffuse the light. At nighttime the illumination from the fluorescent lights is also reflected and diffused from the racks and ceiling in the same manner. Illumination test data is given in an accompanying table.

The windows are furnished with adjustable drapes which can be drawn across each individual window instead of roller shades. At night the fluorescent lighting may be switched to a low candlepower for travel comfort.

The washrooms in the coaches are of particular interest because of their equipment and arrangement. The washrooms alone occupy approximately an eight-foot space and are flanked at each end by toilet compartments. The ladies' washrooms are furnished with three combination vanity-and-wash basin fix-

tures arranged in a semi-circle, the vanities being fitted with wing mirrors, individual seats, and facial tissue dispensers. By lifting the dresser top at each vanity, the fixture is converted into a wash basin with hot and cold running water. The dental bowl is a separate fixture. Both the ladies' and men's washrooms have couches seating four persons. The men's room is furnished with two wash basins, one on each side of a dental bowl.

Another interesting arrangement is the separation of the eating facilities of the grill-lounge car into a lunch counter seating six passengers for light meals and a regular dining section accommodating 16 passengers. These facilities and a kitchen together occupy one-half the car and are ahead of the lounge section seating 24. The three main sections of this car are separated from each other by partitions extending from the side walls to the aisle.

All of the cars have lengths of 78 ft. 11 in. over the end sills and 85 ft. 0 in. between the coupler pulling faces. They are 10 ft. wide over the side posts and 13 ft. 6 in. high. The distance between

Illumination Measurements—Central of Georgia Coach No. 660

Artificial Illumination
(One-half of car—curtain open)

Seat stations See Note (1)	Voltage See Note (2)	Foot-candles See Note (3)	Foot-candles 118 volts See Note (4)	Foot-candles std. lamps See Note (5)
1	112.0	31.5	33.2	28.4
2	112.0	17.2	18.1	15.5
3	112.2	29.8	31.3	26.8
4	111.8	20.5	21.6	18.5
5	111.9	33.2	35.0	30.0
6	111.8	21.5	22.7	19.4
7	111.6	32.0	33.8	28.9
8	111.9	23.0	24.2	20.7
9	112.0	33.2	35.0	30.0
10	111.8	22.6	23.8	20.4
11	111.7	31.5	33.3	28.5
12	112.0	23.6	24.8	21.2
13	111.5	34.5	36.5	31.2
14	111.8	22.6	23.8	20.4
15	112.1	33.6	35.3	30.2
16	112.1	24.2	25.5	21.8
17	111.7	35.8	37.8	32.3
18	112.0	23.3	24.5	21.0
19	111.9	32.5	34.3	29.3
20	111.9	23.3	24.6	21.0
21	112.2	34.7	36.5	31.2
22	112.0	23.0	24.2	20.7
23	111.8	31.7	33.4	28.6
24	112.2	23.2	24.4	20.9
25	111.9	33.7	35.5	30.4
26	111.7	21.6	22.8	19.5
27	112.0	31.8	33.5	28.7
28	111.6	18.8	19.9	17.0
4A	112.0	15.6	16.4	14.0
4B	112.0	15.0	15.8	13.5
12A	111.5	18.7	19.8	16.9
12B	111.8	16.1	17.0	14.5
20A	112.0	18.8	19.8	16.9
20B	112.0	16.0	16.9	14.5
26A	111.5	16.7	17.7	15.2
26B	111.5	13.2	14.0	12.0

Average footcandles—window seats 29.6
Average footcandles—aisle seats 19.9
Average footcandles—all seats 24.7
Average vertical footcandles—baggage rail 13.6

Notes:
(1) Odd numbers are window seats—'A' are aisle, 'B' are at baggage rail.
(2) Voltage read simultaneously with footcandles at load center.
(3) Footcandles read on 45 deg. plane, 33 in. above floor at front center edge of seat.
(4) Footcandles as read corrected to 118 volts.
(5) Footcandles corrected to published lamp lumen rating at 118 volts.

Brightness Readings

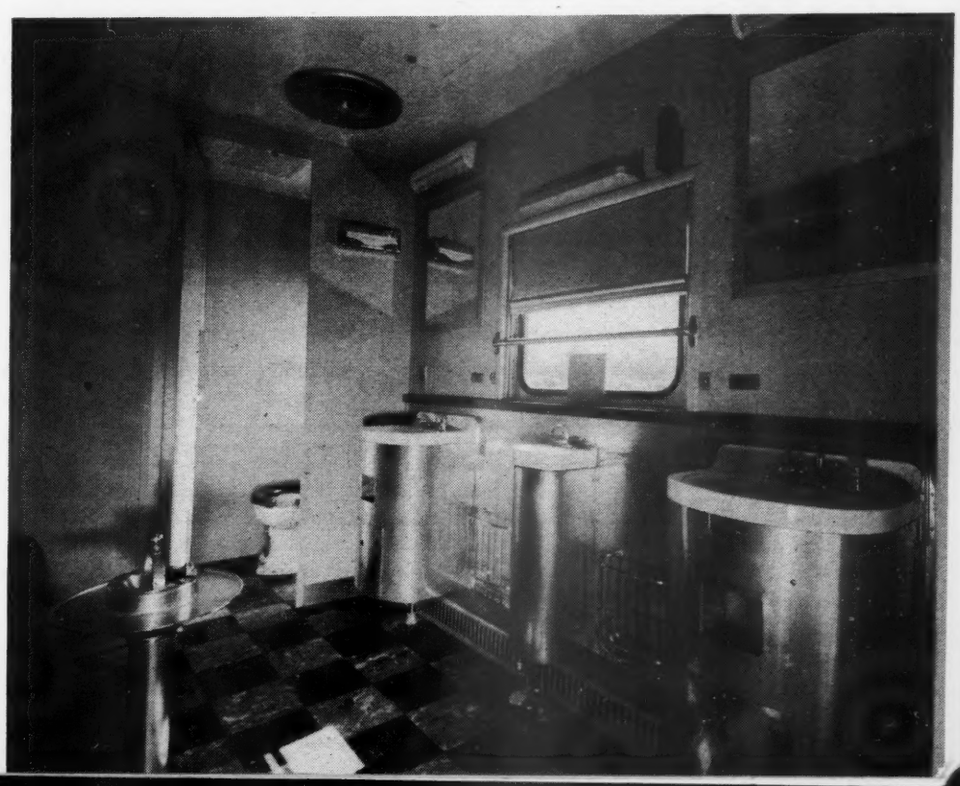
(At 45-deg. angle—aisle seat in center of car)

Conditions	Foot-Lamberts
Near fixture	1,250
Under side of near baggage rack	55
Ceiling above aisle seat	8
Center ceiling	15
Ceiling above far baggage rack	8
Under side of far baggage rack	38

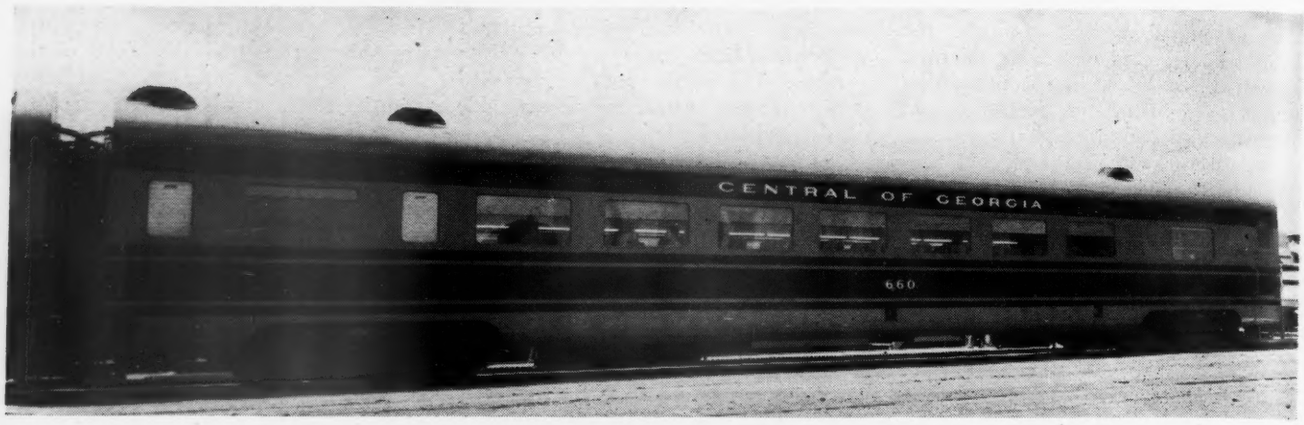
Natural Illumination

Above floor, ft. See note (1)	Footcandles: Curtains open facing west	Curtains closed facing west	All curtains closed: Facing east	All curtains closed: Facing west
1	111	22	10	10
2	121	30	12	18
3	60	40	20	28
4	46	68	26	48
5	76	75	30	52
6	80	80	32	56
7	70	90	36	62
8	68	90	32	65

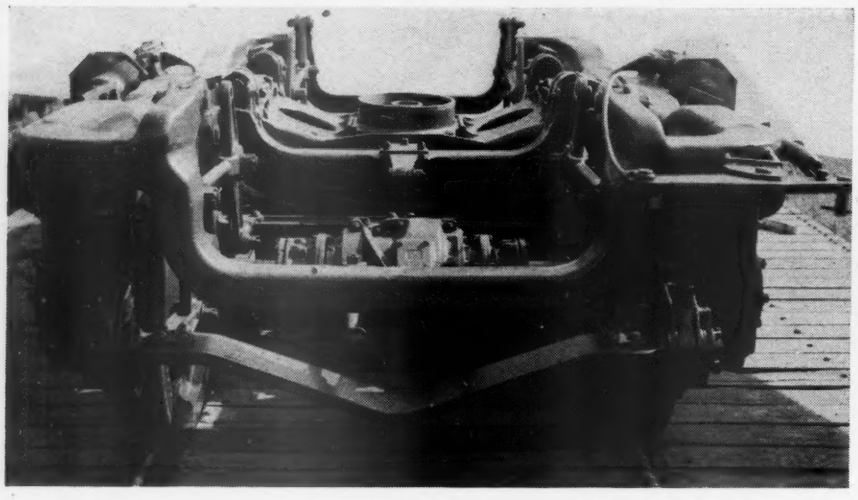
Conditions:
Car extending north and south
Sun 20 deg. from zenith west side
Bright but slightly hazy
Footcandles ranged from 3,500 to 5,500 during readings
Note (1): Opposite center window, center of aisle.



Above—The lunch counter facilities with the dining and lounge sections in the background. Below—The men's toilet facilities in the coaches



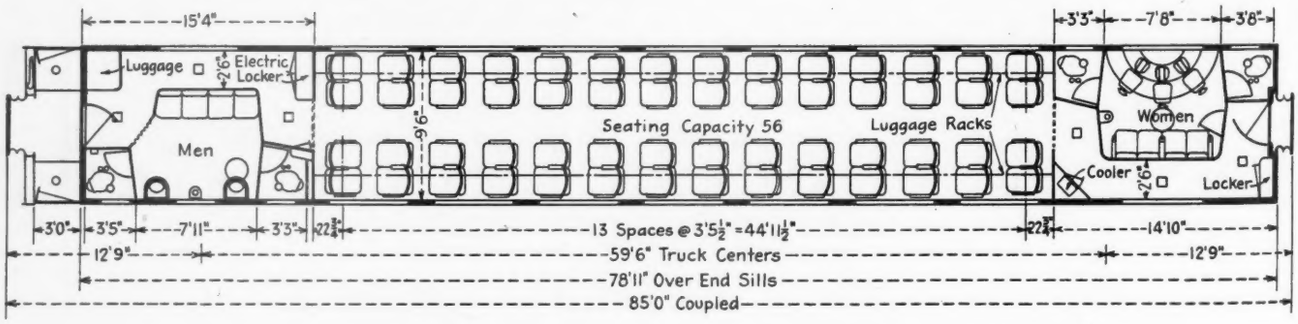
One of the Central of Georgia coaches built by the American Car and Foundry Company



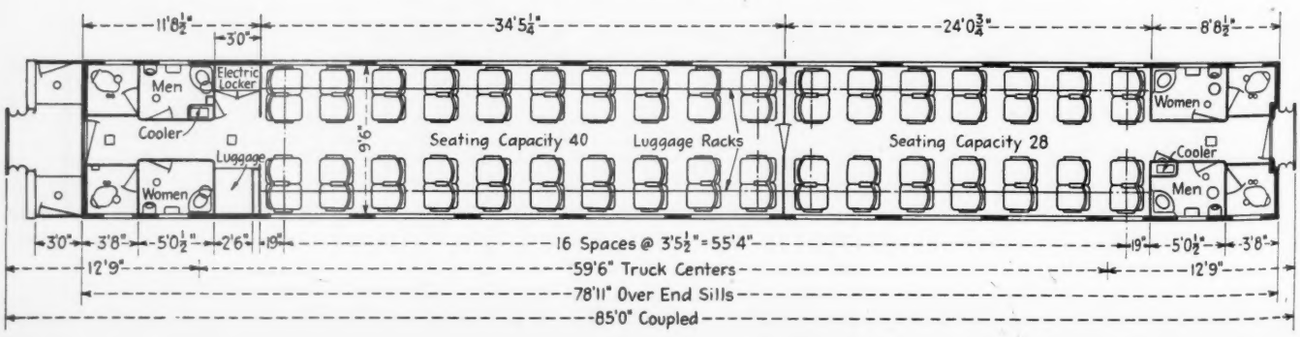
The four-wheel trucks with the Spicer drive on the near axle

truck centers is 59 ft. 6 in. The different car types have the same basic underframe and side frame construction.

The structural framing materials are low-alloy high-tensile steel and open-hearth steel, the latter being used only for the center sills and vertical end members. The center sills are made of two A. A. R. half center-sill sections, Z-26, with the top flanges welded together and with bottom tie plates at the center and the ends. The top flanges of the center sill are reinforced at the end casting attachment with an 8-in., 22-lb. channel extending from the bolster to a point midway between it and the first crossbearer. Steel end castings having integral draft lugs and buffing-gear pockets extend through the



Above—The coaches seat 56 passengers and have two large washrooms. Below—The divided coaches accommodate 68 passengers and have two toilet compartments at each end



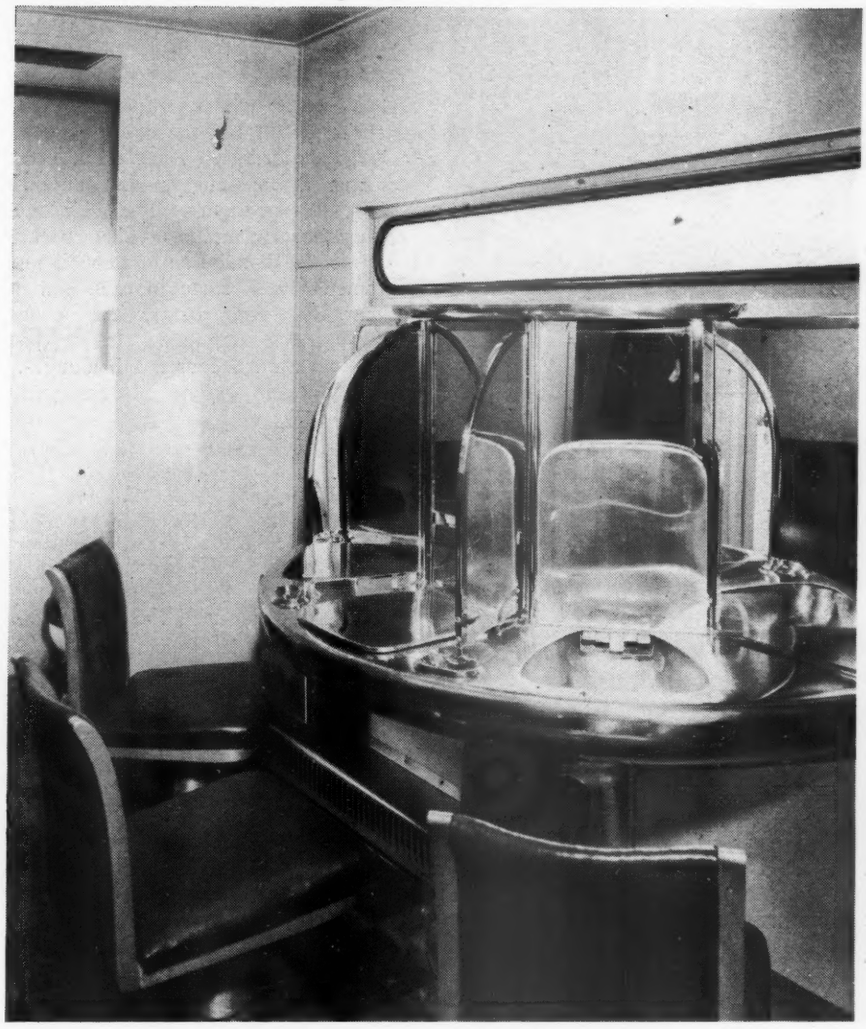
bolsters and are secured to the center sills by welding.

The underframes and the side and roof frames are fabricated in jigs as welded sub-assemblies. Spot welding was used to apply the side sheets and the roof sheets are riveted. After the sub-assemblies were completed they were brought together and riveted, the rivets being concealed on the car exteriors.

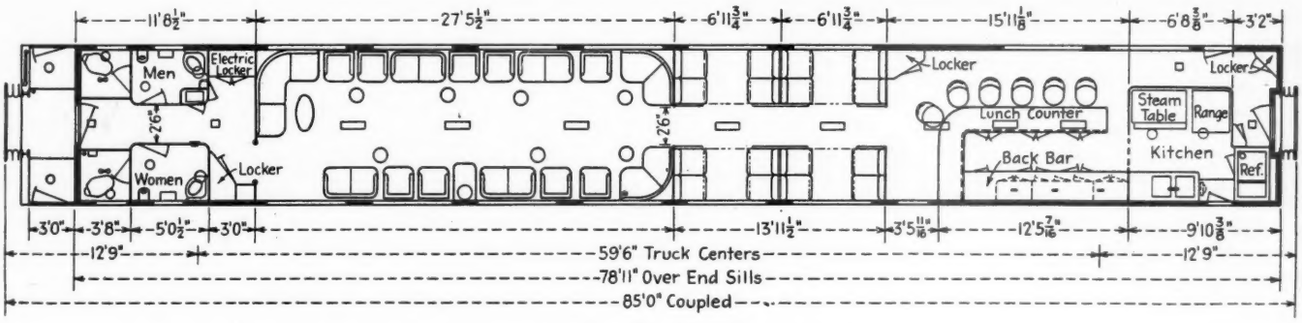
The side plates are formed as Zee sections by a side-frame angle, 2½ in. by 2 in. by 3/16 in., and by a roof-frame angle, 2½ in. by 2½ in. by 3/16 in. after the roof and side sub-assemblies are riveted together. The side sheets, letterboards and pier panels are of 13-gauge low-alloy high-tensile steel spot-welded to all framing members with the joints butt-welded and ground smooth. The skirting is made of 16-gauge low-alloy high tensile steel spot-welded to the side frames. It is cut away at the trucks and hinged in sections to permit access to the equipment underneath the cars.

Roof and Floor Design

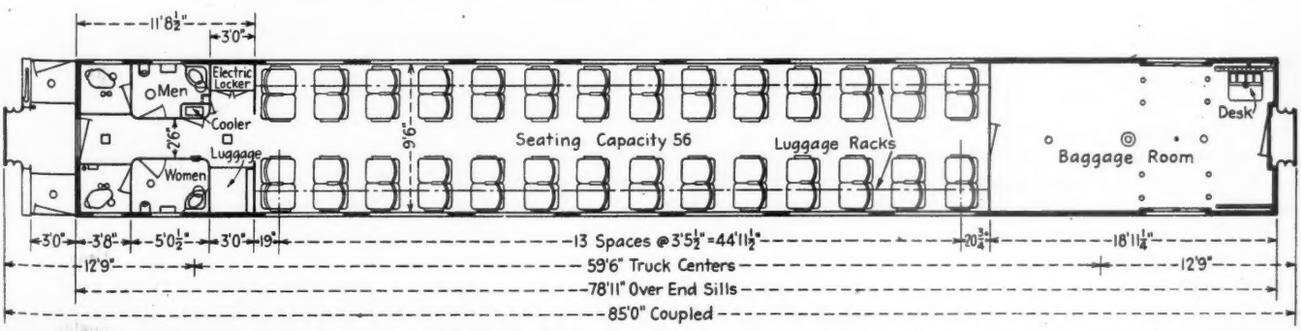
The carlines are 3-in. pressed Zee sections of 13-gauge steel. Welded to these are the purlines of 16-gauge steel extending the full length of the roof. The carlines are welded to the roof side angles that form a part of the side plates. The roof frame is covered with low-alloy high-tensile sheets of 16-gauge steel that is secured to the fram-



Three combination vanities and wash basins are arranged in a semi-circle in the ladies' washrooms



Above—The grill-lounge car seats 24 passengers in the lounge, 16 in the dining section and six at the lunch counter. Below—The coach-baggage car is arranged with seats for 56 passengers, two toilets and a 19-ft. baggage room



The entrance to the divided coaches with the electric water cooler at the right

ing by rivets having special low heads. The roof has the A. A. R. oval contour.

A false floor of 18-gauge zinc-grip steel is welded to the underframe members. Five longitudinal stringers, one on each side located under the seat pedestals, are supported by the underframe cross members. A Keystone floor of 20-gauge galvanneal steel is 5/8 in. high.

Each car has a vestibule at one end only. These have O. M. Edwards' trap doors which operate the folding steps. The vestibules are equipped with stainless-steel super Diamond floor plate; the steps have Kass safety treads of stainless steel.

Insulation

The divided coaches and the coach-baggage car are lined with Stonefelt insulation; the coaches and grill-lounge car have Fibreglas. All cars have 3-in. insulation in the sides and roof and 2-in. in the ends and floors. Anti-squeak tape is used throughout the cars to break the direct metallic connection between the car framing and the inside finish.

All coach seats are Heywood-Wakefield's Sleepy-Hollow type spaced on 41½-in. centers. The coaches have a capacity of 56 passengers; the divided coaches seat 68 and the coach-baggage 56. The divided coach has one section carrying 28 passengers and another seating 40 passengers. The additional seating capacity in the divided coaches is due to the installation of a men's and a women's wash room in each end of the car, these four rooms, each on one side of the center aisle, taking less space than the spacious coach lounges.

The lounge section of the grill-lounge car carries 16 passengers in seats along both sides of the cars and eight passengers in built-in sofas at three corners of the section. The dining section has fixed booth-type seats for 16 passengers and the lunch counter is furnished with stools for eight persons.

Decorative Treatment

The exteriors of all cars are painted the standard gray and blue of the Central of Georgia and the same general color scheme is used for the interiors. In all coach compartments the interior

Partial List of Materials and Equipment on the Central of Georgia Cars Built by the American Car and Foundry Company

Aluminum	Aluminum Company of America, Pittsburgh, Pa.
Steel castings	Sterling Steel Castings Co., East St. Louis, Ill.
Cor-Ten steel	Carnegie-Illinois Steel Corp., Pittsburgh, Pa.
Truck frames, Cast steel	General Steel Castings Corp., Eddystone, Pa.
Wheels	Standard Steel Works, Division of Baldwin Locomotive Works, Burnham, Pa.
Springs	American Locomotive Co., New York
Axles	Standard Steel Works, Division of Baldwin Locomotive Works, Burnham, Pa.
Buffer spring, Upper	Standard Railway Equipment Manufacturing Co., Chicago
Buffer castings	General Steel Castings Corp., Eddystone, Pa.
Draft gear	W. H. Miner, Inc., Chicago
Couplers and yokes	National Malleable & Steel Castings Co., Cleveland, Ohio
Bolster locking center pin	W. H. Miner, Inc., Chicago
Side bearings	American Steel Foundries Co., Chicago
Shock absorbers	Monroe Auto Equipment Company, Monroe, Mich.
Roller-bearing wheel units	Hyatt Bearings Division, General Motors Corp., Harrison, N. J.
Sound-deadening pads:	
Rubber	United States Rubber Co., New York
Fabreeka	Fabreeka Products Co., Boston, Mass.
Air brakes	New York Air Brake Co., New York
Simplex clasp brakes	American Steel Foundries Co., Chicago
Hand brakes	W. H. Miner, Inc., Chicago
Brake shoes	American Brake Shoe Co., New York
Vestibule curtains	Morton Mfg. Co., Chicago
Trap doors	O. M. Edwards Co., Syracuse, N. Y.
Threshold plates	American Abrasive Metals Co., Irvington, N. J.
Weatherstrip	Harnley Weatherstrip Co., Chicago United States Rubber Co., New York
Insulation:	
Fiberglas	Gustin-Bacon Mfg. Co., Kansas City, Mo.
Stonefelt	Johns-Manville, New York
Doors, inside	Haskelite Mfg. Corp., Chicago
Doors, outside	American Car and Foundry Company, New York
End door hinges	Loeffelholz Company, Milwaukee, Wis.
End door locks	Dayton Mfg. Co., Dayton, Ohio
Locks and door closers	Russell & Erwin Mfg. Co., New Britain, Conn.
Masonite	Masonite Corporation, Chicago
Plymetl	Haskelite Mfg. Corp., Chicago
Anti-squeak tape	Armstrong Cork Co., Lancaster, Pa.
Composition flooring	Tuco Products Corp., New York
Keystone floor	American Car and Foundry Company, New York
Floor covering	Johns-Manville, New York Armstrong Cork Co., Lancaster, Pa.
Sash	Hunter Sash Co., Inc., Flushing, L. I., N. Y.
Glass	Pittsburgh Plate Glass Company, Pittsburgh, Pa.
Pressed prism safety glass	Pressed Prism Plate Glass Co., Chicago
Window curtains	Adams & Westlake Co., Elkhart, Ind.
Formica	Formica Insulation Company, Cincinnati, Ohio
Reclining seats	Heywood-Wakefield Co., Gardner, Mass.
Sofas, chairs and tables	General Fireproofing Co., Youngstown, Ohio
Upholstery fabric, coach	Goodall Fabrics, Inc., New York
Drapery materials	F. Schumacher & Co., New York
Ash stands and serving trays	Marshall Field & Co., Chicago
Kitchen range and broiler	Detroit Michigan Stove Co., Detroit, Mich.
Drinking water cooler	Marquette Railway Supply Co., Chicago
Batteries	Electric Storage Battery Co., Philadelphia
Charging receptacles	Pyle-National Company, Chicago
Axle lighting equipment	Safety Car Heating & Lighting Co., New York
Lighting fixtures	Luminator, Inc., Chicago Safety Car Heating & Lighting Co., New York
Electric wire	Okonite Company, Passaic, N. J.
Electric conduit and fittings	Pyle-National Company, Chicago Appleton Electric Company, Chicago Thomas & Betts Co., Elizabeth, N. J.
Air conditioning equipment	Safety Car Heating & Lighting Co., New York
Air diffusers	Anemostat Corporation of America, New York
Exhaust fans	Diehl Mfg. Co., Somerville, N. J.
Exhaust ventilators	Railway Utility Company, Chicago
Uni-flo grilles	Barber-Colman, Rockford, Ill.
Heating equipment and air conditioning controls	Vapor Car Heating Co., Inc., Chicago
Train connectors	Pyle-National Company, Chicago
Flush hoppers	Duner Company, Chicago
Lavatories, Pipe fittings	Crane Company, Chicago
Copper pipe and fittings	Mueller Brass Co., Port Huron, Mich. Chase Brass & Copper Co., Inc., Waterbury, Conn.
Pipe insulation	Johns-Manville, New York Gustin-Bacon Mfg. Co., Kansas City, Mo.
Fire extinguishers	Pyrene Mfg. Co., Newark, N. J.
Paint, exterior	E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
Tanks	Scaife Company, Oakmont, Pa.

finish below the windows is blue. The panels dividing the windows, the end walls and the passageways are painted a soft gray. The portion of the cars above the windows, including the bottom of the basket racks, are a pale ivory. Adjustable draperies at the windows are a combination of blue, yellow and cream.

Half of the coaches have seat covering in a soft blue, the other half being in a rust color. The floor covering is a mottled agate tile with gray inserts forming a diamond design.

The grill-lounge car has the same color scheme except that Venetian blinds and a carpet replace the draperies and tile floors of the coaches.

Truck Design

Four-wheel single drop-equalizer trucks with cast-steel frames made by the General Steel Castings Corporation are used under all cars. They have 5½-in. by 10-in. journals fitted with Hyatt roller bearings and with smoke bombs to indicate overheating. Both the equalizer and bolster springs are alloy-steel helical types. Vertical motion is controlled by Monroe shock absorbers and the truck bolsters are restrained by rubber-cushioned bolster anchors.

Sound-deadening materials, Fabreeka and rubber, are used to isolate noises completely from the car body. The principal points insiulated are the bolster springs, truck center plates, body side bearings and the moving parts of the coupler and buffer mechanisms.

The cars have National tight-lock couplers, A. A. R. type "H," with Miner's A-4-XB draft gears and B-18-X buffers.

Electrical power is supplied by the Safety Car Heating and Lighting Company's 20-kw., 32-40 volt genemotor with a Spicer drive. The batteries are Exide Monoblocs, type EPTC-45-A, of 1,294 ampere-hour capacity.

Air conditioning is furnished by an electro-mechanical eight-ton unit of the Safety Car Heating and Lighting Company in each car. Both the air conditioning controls and the heating equipment were supplied by the Vapor Car Heating Company. The heating system is the unit fin type with an air tempering coil in the evaporator.

Fluorescent lighting is used throughout all passenger sections; incandescent lights are installed in the passageways and the toilets.

Drinking water is supplied from an electric water cooler in each car.

The New York Air Brake Company's schedule HSC air brake equipment with D-22-R control valves is installed in all cars. Simplex unit clasp brakes are applied.

A Miner staff type hand brake is located in the vestibule of each car.

The kitchen interior equipment, the counter and the back bar of the counter are of stainless steel construction. Kitchen equipment includes the Detroit Michigan Stove Company's junior commercial open-top range with salamander broiler operating on propane gas.

The water-storage capacity for the grill-lounge car is 200 gallons; all other cars carry 150 gallons.

New Tournapull

Another model in its line of high-speed, electric-controlled earth-moving equipment—the Model B Tournapull, having a capacity of 35 tons—has been announced by R. G. LeTourneau, Inc., Peoria, Ill. Powered by a 225-hp. Diesel engine, the new unit is available for use with two sizes of scrapers—the new E-35 Carryall having a capacity of 35 tons (26.1 cu. yd., struck), or the 25-ton E-25 Carryall (16.5 cu. yd., struck). With the E-35 Carryall the overall specifications of the unit are: Length 37 ft. 6 in.; height 11 ft. 3 in.; width 11 ft. 7 in.; wheelbase 23 ft. 8½ in.; minimum turning radius 33 ft.; and empty weight 20½ tons. It can make a 90-deg. turn in either direction.

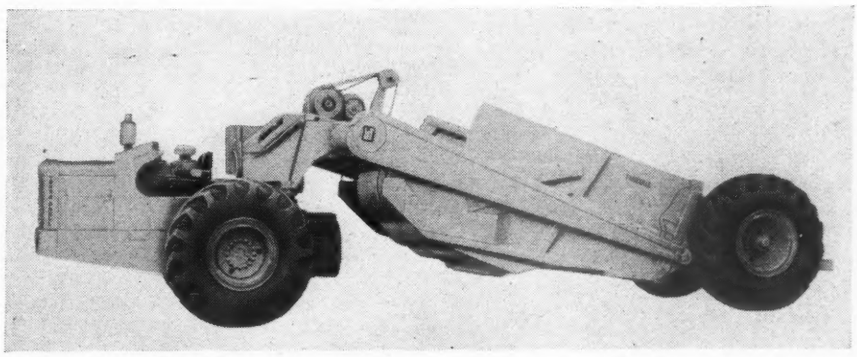
The new developments in the design of the Model B Tournapull include electric control, Tournamatic constant-mesh transmission, and Tournamatic differential. The Tournapull steering, and the Carryall bowl, apron and tailgate are all controlled by individual electric motors, replacing conventional steering principles and eliminating the need of a power-control unit for operating the scraper. The electric motors are of a new alternating-current type with the lugging characteristics of the direct-current type, and are specifically designed and built for use in connection with heavy construction work. These electrically-operated controls are said to give all Tournapull and scraper operations finger-tip control by means of push buttons on the Tournapull dashboard.

The new Tournamatic constant-mesh transmission eliminates the foot clutch and permits changes of gear by moving one lever, which is said to give non-stop, instantaneous speed selection. The unit has four speeds forward and two in reverse, and travels at speeds up to 15 m.p.h.

A newly-designed torque-proportioning differential is said automatically to supply the most power to the drive wheel having the firmest footing, which action is said to give positive control, greater traction regardless of underfoot conditions, and to eliminate the spinning of any wheel independently of the other.

Both the Model B Tournapull and the Carryall are mounted on 24.00 by 29 tapered-bead tires. The tapered-bead tire is said to seat itself firmly against the wheel rim at low air pressure, which action is reported to give greater traction and flotation and longer life.

The new Tournapull is designed specially for high production with high speed and maneuverability, and is said to be particularly adaptable for big yardage jobs, such as roadway construction, or those involving heavy stripping.



The Model B Tournapull with scraper

Based on good working conditions, negligible grades, level cuts, efficient management and a 60-min. per hr. operating efficiency, the Model B Tournapull with the E-35 Carryall is said to be capable of moving 347 cu. yd. of earth per hour on a 500-ft. one-way haul, 244 yd. on a 1,500-ft. haul, 169 yd. on a 3,000-ft. haul, 129 yd. on a 5,000-ft. haul, and 69 yd. on a 10,000-ft. haul.

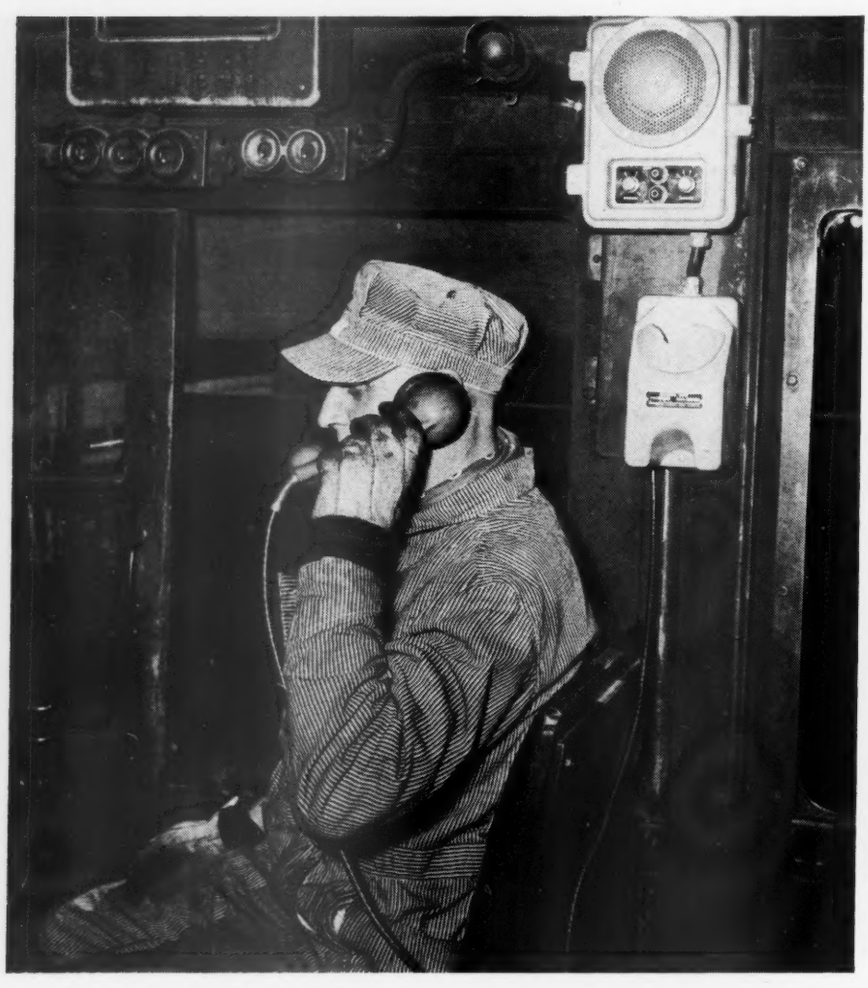
Train Communication in Road Service on Duluth, Missabe & Iron Range

Project on complete operating division includes equipment in 10 locomotives, 17 cabooses and 7 wayside offices, for operation on 440 track-mile

As a means of minimizing delays and facilitating train operations, the Duluth, Missabe & Iron Range has installed inductive radio train communication for use on all freight trains on a complete operating division including 440 mi. of track, 10 locomotives, 17 cabooses and 7 wayside offices. The principal traffic handled by the D. M. & I. R. is iron ore, which is hauled from the mines in Northern Minnesota to the ports at Duluth and Two Harbors on Lake Superior. From these ports the ore is shipped in lake boats to various points in the vicinity of steel mills at ports on the lower Great Lakes. The rail haul from the mines to the ore docks varies from about 60 mi. to 95 mi. The Missabe division, which has been equipped with the inductive radio train communication, extends west and north from Duluth to mines on the Mesabi range at Coleraine, Taconite, Hibbing, Mitchell, Shenango, Buhl, Mt. Iron, Virginia and other towns as indicated on the accompanying map.

As a general rule the ore is hauled in solid trains, each consisting of 180 cars. The cars are each 24 ft. long, coupling to coupling. The older cars each have a capacity of 50 tons of ore, and the newer ones 70 tons. The locomotives used on these ore trains are rated at 140,000-lb. tractive effort. The train speeds are limited to 30 m. p. h., plus 5 mi. tolerance, for northbound trains, and 25 m. p. h., plus 5 mi. tolerance, southbound. In order to minimize damage to equipment and to reduce the number of break-in-twos, special efforts are made to coordinate operations so that the southbound trains, which are loaded, need not be stopped from the time they leave the yards at the mines until they arrive in the Proctor yard near Duluth.

The engine and train crews make their headquarters at Proctor, and ordinarily a run is made by taking a train of empty cars to a mine yard at some town on the range, and then returning to Proctor with a train of loaded cars. On the average, about 10 to 12 such trains are operated daily. A local freight train is operated each way daily except Sunday, and a local passenger train supplemented by branch line passenger service is operated each way daily.



The loud-speaker and hanger for the handset are mounted in the cab of a locomotive behind the engineman's seat

Train Communication Equipment

The train communication equipment is the Aireon inductive radio type, operating at 170 kilocycles, frequency modulated. In the cab of each freight locomotive, the loud-speaker and hanger for the handset are mounted on the wall near the engineman's seat. A small panel, just below the loud-speaker, includes knobs for adjusting the volume of the loud-speaker, as well as the squelch to eliminate the noise between transmissions. In the center of this panel are two small lamps which are lighted to indicate that the system is operating properly. For example, when transmitting, the upper lamp is lighted to indicate that the equipment is functioning to place the message "on the air." An incoming message causes the lower lamp to glow.

The single-turn loop—for transmitting as well as receiving—extends in a vertical plane the length of the locomotive. The upper side of the loop being on special brackets above the

boiler and to the right of the steam dome and smoke stack, and the lower side extends along under the running board. The radio sets for sending and receiving are shock-mounted in cases located under the head brakeman's seat in the cab. Power for operating the radio is taken from the steam-driven turbo-generator on the locomotive. Thus the communication equipment is all on the locomotive proper, with none on the tender.

Equipment on Cabooses

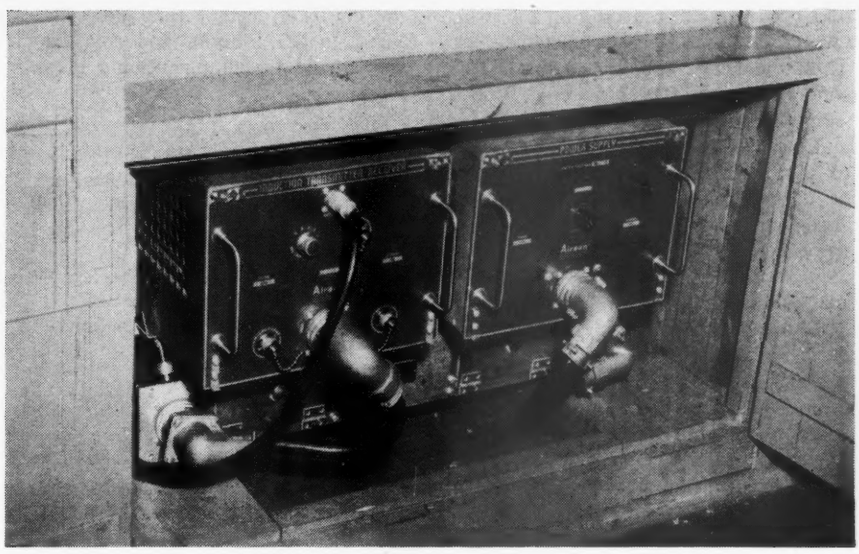
In each caboose the loud-speaker is mounted in one end of the cupola, and the handset hanger in the other end, the cord being long enough to allow the handset to be used by a man seated in the cupola or standing on the floor of the caboose. The single-turn loop for sending and receiving extends in a vertical plane around the length of the caboose, the wire being encased under wood moulding. The radio equipment for sending and receiving is located in one of the cupboards below the cupola. The power for operating the radio equipment and electric lamps on the caboose is furnished from a 110-volt a.c. generator which is driven by a small Diesel engine located in a special compartment in a corner of the car.

In this communication system, when either sending or receiving, the loops on the cabooses or locomotives are inductively coupled with the previously existing telegraph and telephone wires on the pole line. These wires transmit the high-frquency energy between the vicinities of the locomotive and the caboose of a train, between trains, or between wayside offices and trains. On certain sections the pole line includes seven wires, of which four are copper and three are iron. Between Hull Junction and Hibbing the pole line consists of two iron wires, and, between Hull Junction and Coleraine Junction, two copper wires. Other factors being equal, the range of communication increases in proportion to the number of wires on the pole line.

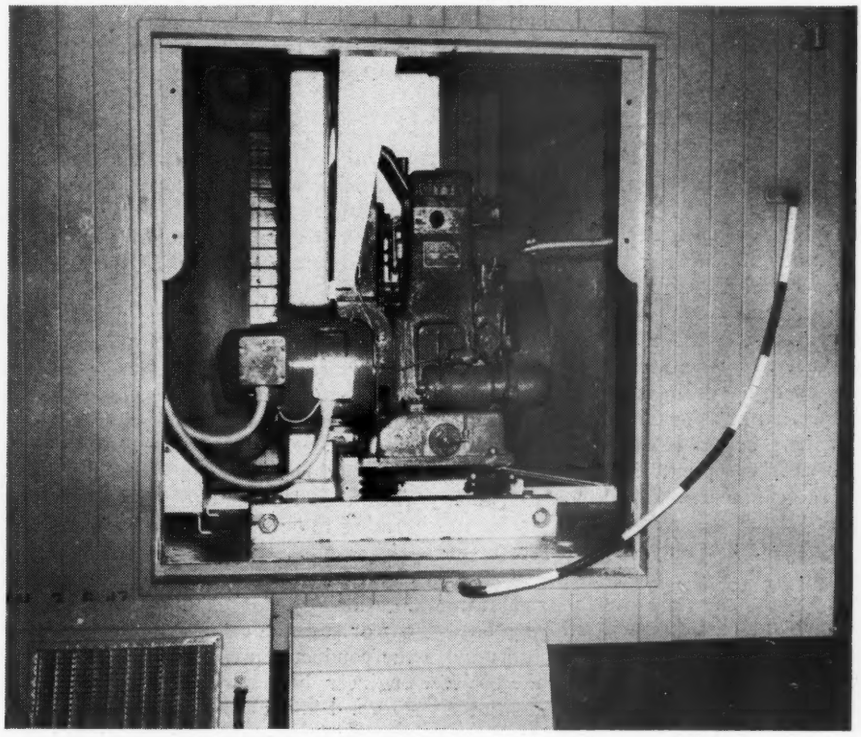
Inductive radio apparatus for communication with trains is located in the dispatcher's office in Duluth, at the yard office in Proctor, and in the offices at Coleraine Junction, Iron Junction, Mitchell, Riley and Taconite Junction. Satisfactory communication can be maintained between a caboose and a wayside station for distances ranging from 30 mi. to 50 mi. or more, depending on local conditions and the number of wires on the pole line. However, when on a long section of line, as for example between Coleraine Junction and Iron Junction, a train crew "works" with the nearest open office. Approximately half way between these points, inductive blocks were connected in the pole line wires so that, for example, when a northbound train passes this point, the crew is forced to work with the operator at Iron Junction rather than the one at Coleraine Junction. By this means, the train communication, as operated with one office, is limited to a certain area, thereby improving efficiency by minimizing confusion.

The train communication is not intended for use as a means of dispatching trains, the train movements being authorized by timetable and train orders the same as previously. Rather, it is used primarily to convey information which will aid in getting trains out of yards sooner; in reducing the number of stops en route; and in minimizing the duration of delays if necessary to stop.

When a train is made up in a yard, the conductor uses the radio to advise the engineer when the required train



The electronic radio equipment is arranged in demountable, plug-coupled units which are located in a cupboard in the caboose



On each caboose the 110-volt power is furnished by an engine-generator mounted in a special compartment in a corner of the car

line pressure is pumped up, and when the brake tests are completed. Also, when the train is ready to depart, the conductor gives the engineer a proceed signal by radio. Previously this information was passed from the rear end to the front end by hand, flag, lamp or lighted fusee signals. In congested yards, such as at Proctor, serious delays were occasioned in passing hand signals, especially in foggy weather. On the average, the radio saves from 10 to 15 min. in getting a train out of the yard. Similarly, when stops are made on the road, the conductor uses the radio to advise the engineer that the flagman has returned to the caboose and that the train can be started. This saves the time which was previously lost in passing hand signals.

On May 13, when a road train was picking up some cars at Mitchell, a trainman saw that one of the cars was in bad order. As a result of using the radio to communicate between the caboose, the locomotive and the yard office, it was determined that the defect could be corrected with the car in the train, thereby eliminating the necessity of setting it out. This allowed the train to depart without excessive delay.

On June 5, when making an air test on a train preparing to depart from Rust yard, near Hibbing, trouble was experienced with one car. When the engineer and the conductor were using the radio to discuss the trouble, the yardmaster in the office at Mitchell overheard the radio conversation. He picked up a car inspector and went at once to the car. The necessary adjustments were made quickly, thereby obviating the necessity of setting out the car, which would have caused a delay of at least one hour in the departure of the train.

Used While on the Road

While en route, the conductor and trainmen watch their train, and if they see a hot box, or any condition affecting the movement and safety of the train, they can use the radio to advise the engineer. By conversation, they agree on where the train is to be stopped for inspection at a location where the train can best be started again or where a car can be set out if necessary.

The enginemen and trainmen on each train watch the cars of other trains as they pass. On May 2, the engineer of Extra 229 South received a call from the conductor of a northbound train stating that a brake was sticking on a car near the middle of the southbound train. The engineer increased the brake line pressure and thereby released the brake, without stopping the train. Thus, whenever the conductor sees defects on the train, he can use the radio to advise the engineer, rather than open the air valve in the caboose and run the risk of damage to equipment and break-in-twos.

The operators in the wayside offices also watch passing trains and, if they see a brake that is sticking, can use the radio to advise the engineer.

Each set of steps on a caboose is lighted by a lamp mounted underneath the car

While en route crews use the radio communication system to convey information concerning the progress being made by trains. For example, on July 1, a southbound train on the Alborn branch was approaching Coleraine Junction just a short time prior to the approach of a southbound train on the main line. After an interchange of information by radio, the engineman of the train on the main line reduced speed, thereby allowing the other train to pass through the junction in time to clear the block and to allow the interlocking to be lined for the second train. Thus neither train was required to stop.

When stopping a train at a certain location—as, for example, to set out a car or stop the caboose at some point—the conductor uses the radio to tell the engineer how many car lengths more to go. Similarly, when entering or departing from a yard or siding, the conductor keeps the engineer informed of the location of the rear end. In special instances, to save train stops, arrangements may be made for yardmen to line switches. When a train was departing from Emmert, on June 30, a yardman was directed to close the switches, and, therefore the conductor used the radio to tell the engineer to "highball the north gates." This saved a stop and delay for the train.

If a train breaks in two the radio is used advantageously in three ways: (1) to pass information back and forth between the conductor and engineer; (2) to advise the train dispatcher so that repairs can be made or the car set out as quickly as possible; and (3) to get the train on its way again. In case of an unusual stop, the radio is used to pass word to any following trains so that they can reduce speed and exercise special caution. Also, in case of a derailment, in which the other track or tracks may be fouled, the radio is used to warn trains on those tracks also. This does not dispense with the use of other signals or measures for the protection of trains.

Finds Broken Rail

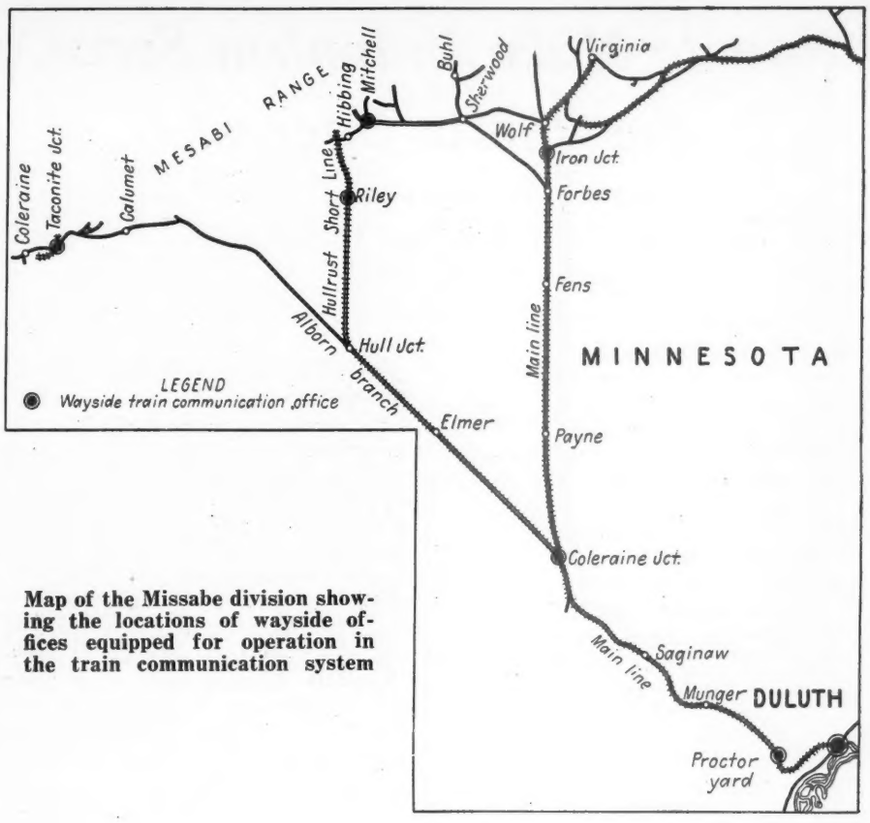
Train communication is being used in some instances to report defective track conditions and thereby trains can be stopped short of the defects, and track forces can be called quickly to make repairs. For example, on May 7, the conductor on Extra 220 North called the operator at Coleraine Junction to report that his caboose had passed over a defective piece of track just south of the bridge at Burnett. The engineer of Extra 229 South heard the statement, and, as he approached Burnett, watched the rails on the southward track. He saw that a section of the rail was broken out, and used his radio to report this to the operator at Coleraine Junction. Accordingly, trains on the northward track were stopped short of the bridge at Burnett. The track foreman was called and he replaced the rail. Thus the radio train communication was effective in eliminating a potential cause of derailments. In the event of a train accident, the radio would be advantageous in making complete reports immediately, thus permitting decisions to be made promptly concerning action to be taken in the operation of other trains or in sending out aid.

When Pole Line is Down

The train radio serves as an emergency means of communication during failures of the conventional telegraph and telephone line circuits. During a recent flood, a section of pole line was washed out so that wires were broken and telegraph and telephone communication was out of service. Nevertheless

the train communication system worked satisfactorily through this break. Thus, in this instance, the new radio system was effective in keeping trains moving when otherwise delays would have been serious until the flood subsided, and the line wires were repaired.

The radio train communication system is a great help in the operation of local freight trains. Upon arriving at a town, the engineer and conductor use the radio to discuss the switching moves to be made. While these are under way, they carry on conversation concerning how far to pull down or back up, thus saving considerable time. By means of the radio, the conductor can keep informed of the progress and exact location of approaching trains, so that he will know whether time is available to run to a town ahead or to make switching moves prior to the arrival of those trains. Thus, by saving a little time here and there, the local freight has been enabled to get over the road in considerably less time, and thereby is rendering better service to the public.



Map of the Missabe division showing the locations of wayside offices equipped for operation in the train communication system

Power Supply on Cabooses

An important feature of this train communication project is the form of power supply on each caboose which consists of a 3,000-watt, 60-cycle single-phase, 110-volt a. c. generator directly connected to a 4-hp., one-cylinder Witte Diesel engine. This unit is in operation continuously while the caboose is in service and supplies power for not only the train communication but also for electric lamps in and on the caboose. The total demand is less than the 3,000-watt capacity, but a Diesel-driven unit of smaller capacity was not available on the market.

The engine-generator unit is mounted on rubber, and is housed in a special compartment constructed in one corner of the car. In order to minimize noise, the walls of this compartment were constructed with a ¾-in. board, a 1½-in. layer of hair felt insulation, a ¾-in. board and an inside lining of tinned sheet metal. The result is highly satisfactory, to the extent that when a train is traveling at normal speed, a man in the cupola, or the other end of the car, can hardly tell that the Diesel engine is running.

The engine-generator compartment is ventilated by a draft, forced by the fan on the engine. Air is drawn in through a screened opening 18 in. square in the outside wall, and exhausts through a similar opening in the roof which is fitted with an overlapping weatherproof cover.

The engine exhausts through a 1¼-in. pipe through the roof. Mufflers are used on some of the engines but not on others, and experience indicates that mufflers are not necessary.

From the inside of the caboose, two sliding doors give access to the engine-generator compartment. These doors are closed and locked by padlocks, the keys for which are held by maintenance forces. From the outside of the caboose, access to the compartment is gained by removing a special panel 49 in. high and 47 in. wide, which is normally held in place by bolts. This panel is taken out when removing an engine-generator for repairs.

When a train crew boards their caboose in a yard, hand pressure applied to a starter button starts the engine-generator, and it operates until the crew returns to Proctor yard and is ready to leave the caboose, when pressure on another button causes the Diesel engine to stop. In normal service the engine consumes about 4 gal. of distillate fuel oil when operated continuously for 24 hr., but in the ordinary procedure the machines are shut down when the cabooses are not in service between runs. Experience indicates that these engine-generators should render 10,000 hr. of operation before needing extensive repairs or overhauling, and this will be more than a year on this project. A fuel oil tank with a capacity of 20 gal. is located in the compartment with the engine-generator.

The train communication system requires only 250 watts while standing by or receiving, and only 400 watts while sending. Electric lamps of various ratings from 25 watts to 60 watts are located at: the conductor's desk; over the air gage in the cupola; and on the ceiling for general illumination of the interior of the caboose. On the roof, at each end of the car, there is an enclosed reflector unit known as a "back-up" lamp, which is used to illuminate the track when backing up or to inspect the track from the rear of the train when running along at night. Alongside each of the four steps on the caboose there is a special lamp unit with a lens arranged to illuminate the steps as a means of improving safety when alighting from or boarding the caboose at night. These various lamp circuits can be turned on or off by switches in a cabinet on the wall in the gangway of the car.

Marker lamps are equipped with 50-watt bulbs and the cords extend to plug-in outlets near each lamp bracket. This circuit has power at all times when the engine-generator is in operation. With all the electric lamps lighted on a caboose, the consumption is 950 watts. The 100-watt back-up lamps are turned on but rarely, and, under normal operations, only one would ever be used at a time. Thus the ordinary maximum demand for lighting would not exceed 200 watts, and the train communication 400 watts, totaling about 600 watts, which is well under the 3,000 watts capacity of the generator.

The locomotives were previously equipped with steam-turbine-driven d. c.

(Continued on page 68)

How to Make Unionism Serve the Public Interest

THE behavior of labor unions, which quite often resembles that of a troop of adolescent mischief-makers, should not conceal from their critics the likelihood that, potentially, these organizations might become a constructive force of the greatest value to the perpetuation of the American system of political and economic freedom. At the same time, it would be equally unwise to err at the other extreme and whitewash unions' misbehavior, laughing off their curable misdeeds as if they were harmless pranks; to spare the rod is to spoil the child. This youth is one who could serve the nation well when and if he attains the stature of a responsible man, but he is not likely to do so unless he is chastened out of his irritating and dangerous disregard for the well-being of others.

Some such conclusions as the foregoing seem to be the consensus of competent academic scholars who have been studying labor unions and industrial relations dispassionately and objectively (i. e., without coloring their opinions as so many "labor economists" have, with an eye to winning a job on some "impartial" governmental board or wage tribunal). Among the foremost of such genuine scholars is Professor Sumner N. Slichter of Harvard, who has summarized his mature conclusions in a recent book,* practically every page of which conveys valuable and hopeful information for every American who is observant enough to realize that either the sand must be removed from the bearings of labor relations or the degeneration of our republic into some form of authoritarianism probably cannot be arrested.

Cooperation Is a Must

This country can neither support its population nor defend itself from foreign enemies without the large volume of production obtainable only through large-scale industrial methods. Such mass production, however, comes to a standstill unless the partners—management, labor, and "capital"—will *cooperate* to make it work. If they will not cooperate *voluntarily*, then the only alternative, if the nation is to live, is to *force* them to cooperate—i. e., the government has to step in to run the show. Voluntary cooperation has been creaking in recent years, largely because unionism has been given so much irresponsible power that it has been able to refuse cooperation except on *its own terms*, which is not real cooperation at all; and the result has been that management and "capital," especially "capital," have been less eager than formerly to extend their partnership with labor in enlarging old industries and developing new ones.

If this tendency should persist and increase—production would languish, necessitating coercive government action, either to curb unionism or to dragoon management and "capital." Such coercion of management and "capital"—and ultimately also of labor—is known either as Communism, Socialism or Fascism. At bottom these three systems are identical, being devices for forcing people to cooperate in production when they do not or cannot cooperate voluntarily.

Consumers vs. Unions

Professor Slichter is an optimist. He believes that unions "are capable of making" a great contribution "toward building a greater civilization"; but they cannot yield such fruit (1) if their legitimate practices are unreasonably opposed or (2) if their serious evils are not resolutely uncovered and corrected. He directs himself toward the task of diagnosis. What he has to say will be nourishing, if occasionally unpalatable, medicine for all unionists. It will be equally instructive to everybody else who has anything to do with unionism (as who has not?), by pointing out the qualities of union behavior which deserve support, in the public interest, and those which ought to be resisted.

It is insufficiently realized, says Professor Slichter, that in negotiating with unions *management represents the consumers* in their desire to keep down the price of goods and services. Unions are frequently able to arouse public support for their demands upon management, because both they and many of the public have the mistaken view that increased wages or onerous working conditions can be paid for by reducing profits—which is true, if at all, only for the short run. In the long run, it is the consuming public which must pay for high wages and wasteful labor practices. Collective bargaining operates against the welfare of consumers—but, if it is not pushed to extremes, that result may be condoned, because there is no particular reason why consumers should enjoy low prices at the expense of "pushing the speed of work so high that men are worn out at an early age."

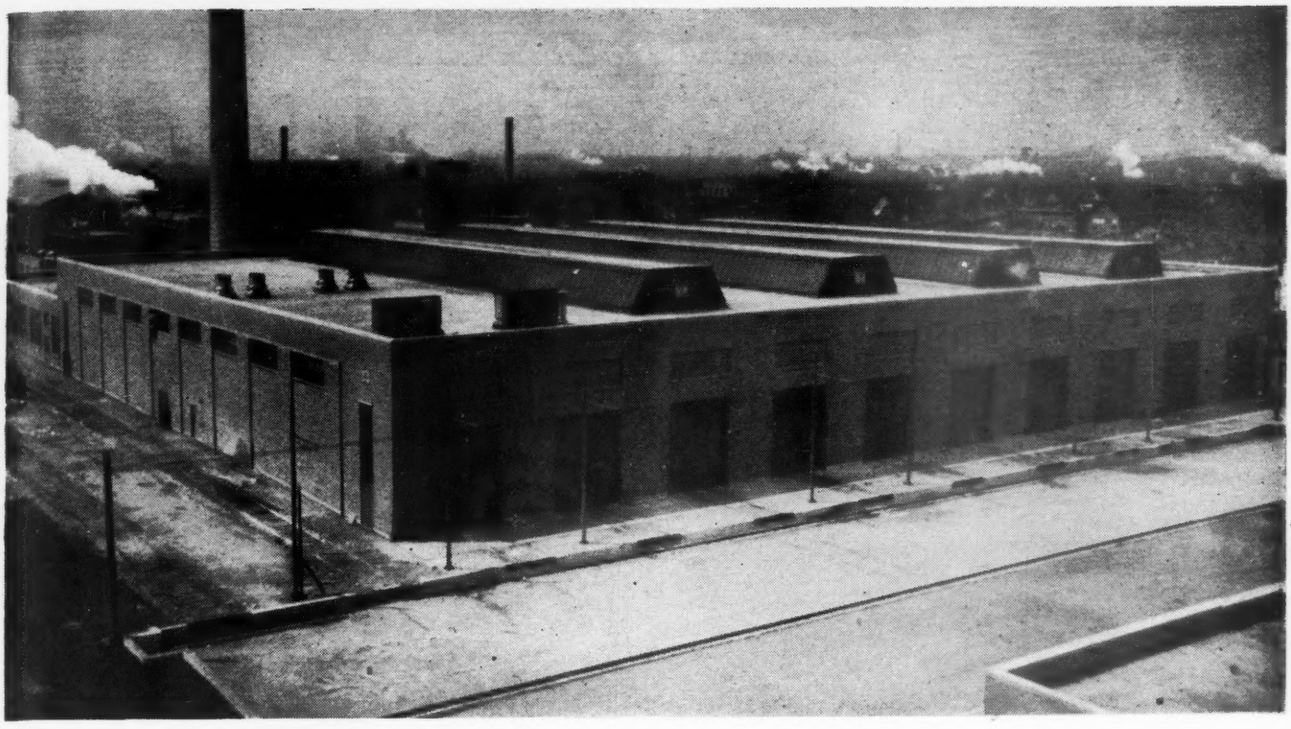
In short, let's have done with the nonsense that the interest of unions is identical with that of consumers. The interests of the two groups are opposed. At the same time, let's concede that the interest of consumers is not so sacred that it should be pursued regardless of its effect on producers. There should be a "middle way" between them. While conceding the right of unions to injure consumers to the degree necessary to attain decent wages and working conditions for employes, public policy, in Professor Slichter's opinion, ought resolutely to terminate such injustices to the consumer as: (a) hiring employees through union "hiring halls"; (b) promotions not based on merit; (c) make-work rules.

There are statements on every page of this book which will challenge "accepted" opinion—that of management and union adherents alike. That is why it should prove stimulating reading to both. There is plenty said which is applicable to labor relations on the railroads. For one thing, Professor Slichter believes railroad employees—along with those of hospitals and public utilities—should be deprived of the privilege of striking, and he offers a formula for making illegal strikes quite an unpleasant experience for those who engage in them.

"If the potentialities for good in the trade union movement can be realized, America will build a civilization which surpasses all others . . .," says the author in conclusion. In this book, probably more completely and briefly than in any other work available, Professor Slichter has made clear what these "potentialities for good" are and what steps are necessary to attain them.

Box cars fill out passenger trains in occupied Germany. The upraised disk means "Get out of town!"

* The Challenge of Industrial Relations. Cornell University Press. Ithaca. Price $2.50.



Looking south at the Rock Island's new passenger-car repair shop at Chicago. The two doors at the left lead into the paint shop

Builds Modern Coach-Repair Shop

Facility of the Rock Island, recently placed in service at Chicago, has all activities concentrated in one building and features combination paint-spray booths and drying ovens

REPAIR and maintenance of all passenger cars on the Chicago, Rock Island & Pacific, including the stainless steel cars for its "Rocket" trains, are now being carried on in a new modern shop at Forty-Seventh street, Chicago, which replaces older, inadequate repair facilities at the same location. The new shop, placed in service early his year, is part of a general program of improvements to the Rock Island's facilities at Chicago. Included in the program, in addition to the coach-repair shop, are a laboratory building,* an engineers' toilet and locker building, a truck, welding and blacksmith shop, and a building to house equipment necessary for servicing streamlined trains.

The Rock Island's coach repair facilities at Chicago were formerly housed in several buildings, most of which were constructed in 1868 when wood coaches were standard equipment. These buildings, with narrow clearances and dark, crowded shop conditions, had become incapable of handling the repair work efficiently. Further, because the old facilities included several buildings, much time was lost in moving work between the different structures.

Large Building

In the new shop building all repair work except that done in the truck shop is performed under one roof; this eliminates the objectionable features of the old arrangement and is effecting substantial savings compared with former costs. The structure contains a large coach-repair shop with eight tracks; a paint shop with two tracks, each enclosed in a combination spray-booth and drying oven; a number of smaller shops to supplement the coach-repair activities; toilet and locker rooms; and office space.

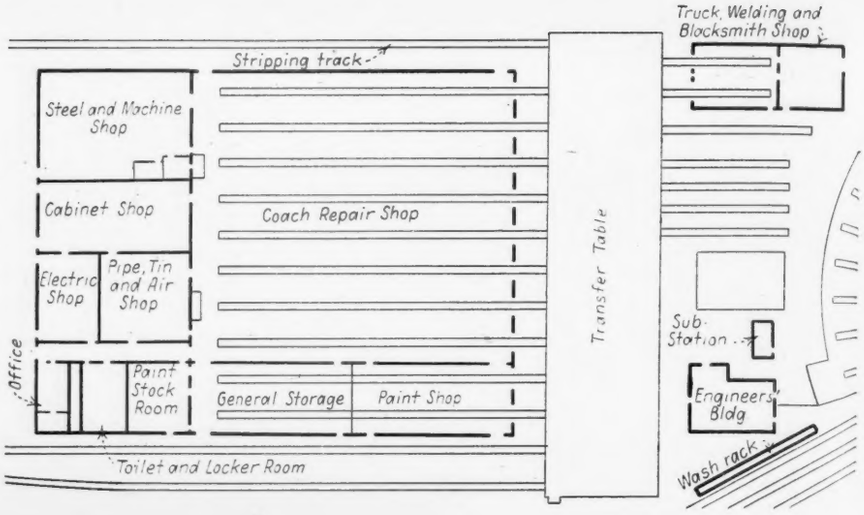
The new shop building is a steel-frame, brick and concrete structure, 252 ft. by 339 ft. in plan, and is arranged with the long dimension in a north-south direction. The coach-repair shop, 202 ft. by 230 ft. in plan, and the paint shop, 50 ft. by 116 ft., together with a general storage room, occupy the northerly, or main, portion of the structure, while supplementary shops are located in the south end of the building, as are the toilet and locker facilities and offices. Projecting into the building from the north end through vertical-sliding doors are ten tracks, eight of which serve the coach-repair shop, while the other two extend into the paint shop.

The section of the building containing the repair shop and paint shop is 32 ft. in height to the top of the coping, and the roof, which has a flat deck of precast concrete slabs covered with tar and gravel roofing, is supported on a system of transverse steel trusses, 50 ft. in span, which in turn rest on longitudinal trusses, 115 ft. long, framed into steel columns. In the roof over each pair of tracks there is a longitudinal

* Described in detail in the *Railway Age* of February 16, 1946, page 359.

monitor, 24 ft. wide and 10 ft. high, which has inclined side walls glazed with Koolite corrugated wire glass.

The southerly portion of the building, 252 ft. by 108 ft. in plan, is somewhat lower than the main shop, the distance to the top of the parapet walls being only 20 ft. 7½ in. In this section the roof, supported on transverse and longitudinal trusses, contains a series of longitudinal skylights, also glazed with Koolite corrugated wire glass. The roof trusses in both sections of the structure were fabricated in the shop of the Duffin Iron Company, Chicago, and are of all-welded construction, except for the field connections.



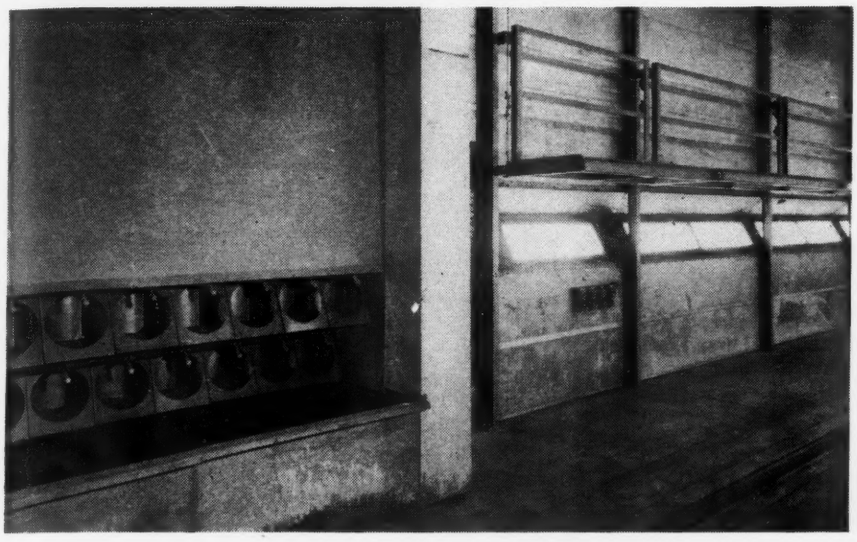
Above—Plan showing arrangement of the new passenger-car repair facilities

Left—The roof of the repair shop is supported on a system of all-welded transverse and longitudinal trusses

Below—A baggage car being painted in one of the Mahon combination spray booths and drying ovens in the paint shop. Note filters in the ceiling to clean air entering the booth, and the continuous, elevator-type scaffold along each side

For daylight illumination the monitors and skylights are supplemented, in both sections of the building, by large panels of Insulux glass block in the walls. In the coach-shop section the panels in the west wall are 16 ft. wide and 18 ft. high. For ventilation an outward-opening steel-sash window is located directly beneath each of these panels. The glass block was not used on the east side of the main portion of the building, due to the presence of the paint shop along that side, but additional light is admitted from the north through multi-paned windows, 12 ft. by 14 ft., in each of the eight track-entrance doors and through glass-block panels, 18 ft. wide and 4 ft. deep, above each door. Similar panels are provided in the south wall of the main shop, above the roof line of the lower, or south, section of the building.

The eight repair tracks in the main shop are spaced at 25-ft. centers to provide ample clearance between them for workmen, tools and scaffolding. The two most westerly tracks are especially equipped to handle heavy work,



such as straightening center sills or other underframe members. These tracks are constructed on heavy concrete foundations to provide anchorage for hold-down rings and suitable bases for jacking operations. An overhead tramway at each of these heavy-repair tracks accommodates chain hoists that are used principally for facilitating the positioning of shot-welding equipment when repairing stainless steel cars.

Conveniently located along each repair track are electric outlets to supply alternating current for car-repair work. These include 440-volt outlets for shot-welding equipment, 220-volt outlets for testing air-conditioning equipment, and 110-volt outlets for operating power tools and checking car-lighting circuits.

Above—Shown at the left in this view, taken in one of the spray booths, is one of the Hydro-Filter units for removing over-spray paint from the air before it is exhausted from the booth

Right—Skylights and large glass-block panels provide ample light for the supplementary shops, as this picture of the steel and machine shop indicates

Below—Truck welding and blacksmith shop conforms in general appearance with the main shop building

Outstanding features of the paint shop are the two combination spray-booths and drying ovens with which it is equipped. The booths, one for each paint track, are 24 ft. wide and 100 ft. long, and are completely enclosed, rolling steel doors being provided at the ends of each booth. Furnished and installed by the R. C. Mahon Company, Detroit, Mich., each booth is equipped with a filter at one end to clean the air entering it, and with a battery of what are known as Hydro-Filters at the other end to remove particles of over-spray paint from the air before it is exhausted into the atmosphere.

The arrangement of the Hydro-Filters is such that the paint-laden air is drawn through a spray of water before it is exhausted to the outside air. The water in the spray contains a special compound which causes the paint to coagulate upon contact, after which

The Whiting 170-ton transfer table operates on only three rails in a pit 20 in. deep

the paint is carried with the water to a settling tank where it collects on the surface.

In the past, one of the most time-consuming operations involved in painting cars has been the work of moving the scaffolding as the painting progresses. In the Mahon spray booths this work is eliminated by the use of two elevator-type scaffold platforms extending the full length of each of the booths, one on each side of the paint track. Electrically operated, these platforms may be raised and lowered at will. Each booth is well lighted by two continuous rows of fluorescent units on each side, one row about five feet above the floor and the other at the ceiling level.

After a car has been painted, the Hydro-Filters are turned off and the oven controls are then turned on to bring the temperature of the booth to a suitable point, determined by the type of finish, to hasten the process of drying the paint. This is done by causing the air entering the booth to pass through heating coils, as well as the filters, with the result that the booth is heated to the desired temperaure in a short time.

Supplemental Shops

The smaller supplemental shops, located in the southerly portion of the building, are each fully equipped to carry out their respective functions. The largest of these is the steel and machine shop, which occupies a room 76 ft. by 109 ft. Others include a cabinet shop, 50 ft. by 109 ft., an electric shop, 42 ft. by 62 ft., and a pipe, tin and air shop 62 ft. square. Located along the east side of this section of the building, and separated from the other facilities in it by a corridor, are the offices; a toilet and locker room for the shop employees containing showers and four Bradley washfountains; and the paint and varnish stockroom, which contains a small spray booth and a small drying oven. The general storage room, 50 ft. by 122 ft., is located to the north of the paint and varnish stockroom, between it and the paint shop, being separated from the latter by a large rolling steel door.

The partitions between the several rooms in the building are of brick, extending to the roof, and are uncovered except in the offices, where they are plastered and painted buff. The floors throughout are of concrete.

A transfer table pit, 80 ft. wide and 322 ft. long, extends across the north end of the shop building to serve the eight repair tracks of the coach shop, the two paint-shop tracks, a stripping track which extends around the west side of the shop building, and two fitting tracks on the east side. The Whiting transfer table, of 170 tons capacity, is unusual in that it operates on only three rails in a pit 20 in. deep, with no part of the table extending below the pit rails.

North of the transfer table pit are the new truck, welding and blacksmith shops, housed in one building, and the engineers' toilet and locker building. The structure containing the truck, welding and blacksmith shops, 47 ft. by 107 ft. in plan, is similar in construction to the larger structure, with generous areas of glass-block panels in its outer walls.

While coaches are being repaired in the main shop, the trucks are brought into this shop where they are completely dismantled, inspected and tested with a Magnaflux unit before being reassembled. It contains two truck-repair tracks which enter the building from the transfer table. A pit in each track contains a spring compressor to aid in dismantling trucks. A Harnischfeger 10-ton overhead crane above each track further facilitates this work. These cranes are each equipped with a control device, within easy reach of men on the floor below, which enables them to control all movements of the crane directly at the point of work.

The west end of the truck-shop building, an area 47 ft. by 50 ft., is given over to the welding and blacksmith shop. This shop, containing a forge, a drop hammer and other smith's tools, performs work for both the coach-repair shop and the nearby enginehouse.

The engineers' wash and toilet building is a one-story structure, conforming in appearance with the other new buildings at Forty-Seventh street. It contains wash and toilet-room facilities for enginehouse mechanics, engine crews and women employees, and also contains an 18-ft. by 22-ft. shop for performing electrical work in connection with the repair of steam locomotives at the enginehouse.

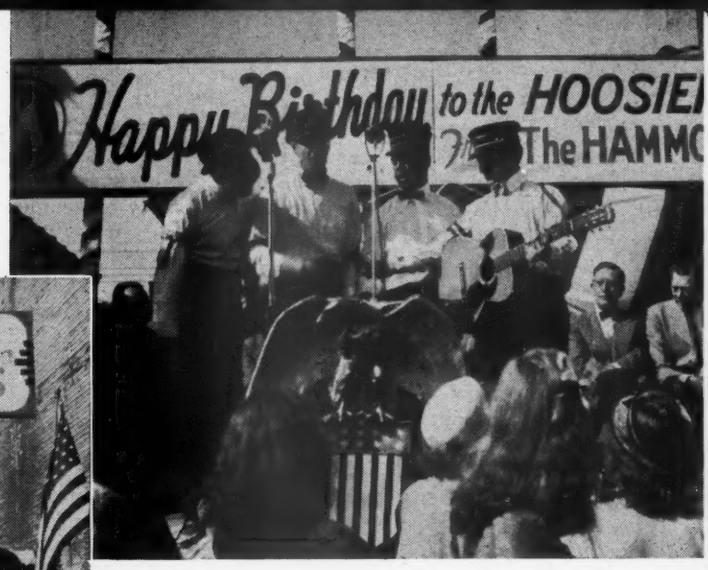
Heating and Lighting

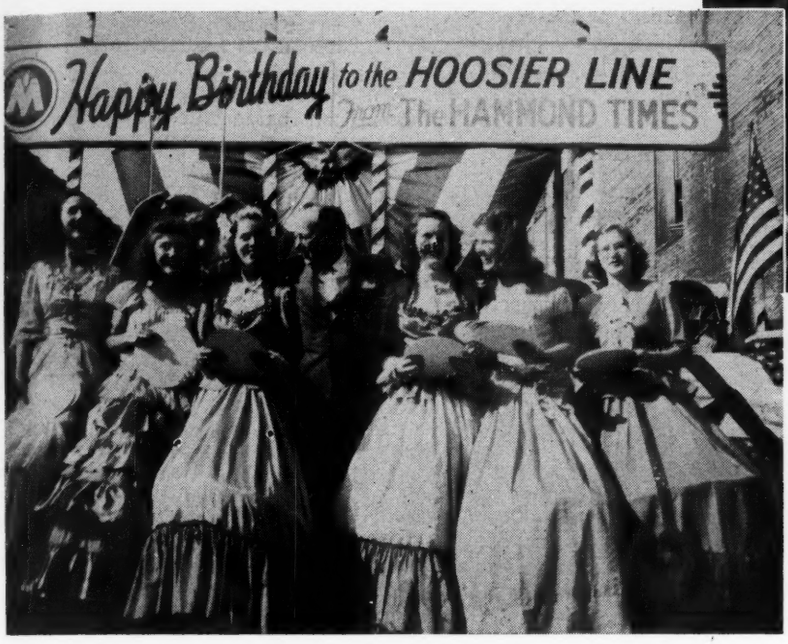
The coach shop is heated by steam from a central plant, circulation within the shop areas being provided by thermostatically-controlled unit heaters fastened to the roof-supporting structure and arranged to direct warm air straight downward. Direct radiation is used to heat the offices.

Lighting throughout the coach shop and in the truck shop is supplied by mercury-vapor lamps in shaded reflectors suspended from overhead. The light is reported highly satisfactory. In the office areas and in the toilet and wash rooms, fluorescent lighting is used.

DeLeuw, Cather & Co., Chicago, were engineers and architects for the work, under the direction of T. C. Frederick, vice-president.

Right—Well-known quartet serenaded Monon towns with songs written especially for the railroad. Below—President John W. Barriger presents the "'belles of the Monon"

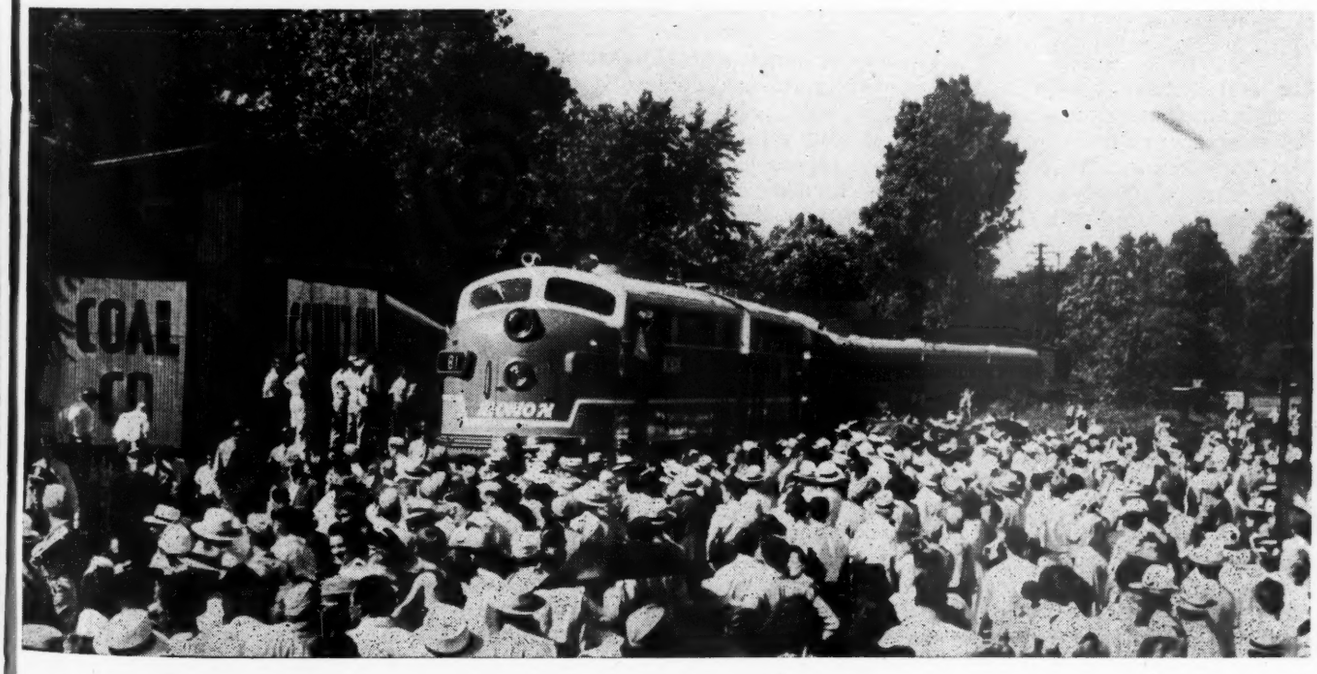




The Monon Is 100 Years Young

THERE never was anything like it in Indiana before. The state's own railroad—the Monon—was 100 years old. "Other lines skim or cross over, but Monon is all Hoosier," is an old Indiana statement of fact. Another, pleasingly put forth by Author George Ade, is that "the Monon is 'catty-cornered' to the whole state of Indiana, and all its trains are 'Hoosiers.'"

One year previously, not long after taking over the presidency of the Chicago, Indianapolis & Louisville—just out of a long bankruptcy—John W. Barriger, in a series of meetings with the civic leaders in towns along the 500-mi. road, took them into his confidence; told them his plans for rehabilitating the road; and asked their aid. By the by, he mentioned that the Hoosier Monon would be 100 years old, come the middle of 1947. New Albany, a city of 35,000 on the Ohio, whence the first segment of the Monon had been started in June, 1847, mulled this fact over. The result: a city-sponsored and supported celebration of



Celebrations along the line featured the new "Hoosier" equipment to be placed in regular service shortly

the Monon's centennial running from July 27 to 30, inclusive, which is conservatively estimated to have been attended by 100,000 persons, including all of the population of New Albany that could walk. There have been more elaborate celebrations in honor of a commercial enterprise, but there is every evidence that they were put on and put up largely by the enterprise itself. The New Albany show, on the contrary, was put on by the citizens of the town, under the direction of Superintendent of Schools H. R. Davidson, with evident spontaneity.

City a Circus

The entire city, during the four-day festivities, took on the air of a giant circus. Virtually every shop in town went to great trouble to dig up old photographs of the Monon or a relic of 19th century railroading with which to decorate its windows. Spanning the main streets at every light pole were stretched banners hailing the road and bearing its distinctive red "M." At least 10,000 men, women and children wore the jaunty ex-WAAC overseas caps on which had been sewed, in red, "New Albany-Monon Centennial." Pockets were full of "wooden nickels" and hands clutched toy train whistles and balloons sold by civic organizations for good causes. Merely to list the elaborate program—which left the good people of the city little time for eating or sleeping—would take a column of this paper. It was divided into four phases:

Homecomers' Day
Exhibitors' Day
Youth Day
Transportation Day

The first featured special religious services in the churches, and a $100,000 model railroad display, which was later judged for prizes. The second day featured a street dance to the music of a "name-band." Youth Day was filled with athletic and hobby contests. Transportation Day wound up the fete with the arrival of the Southern's reconstruction of the "Best Friend of Charleston" and train, under its own steam, from Louisville (across the river) bearing Kentucky dignitaries; the arrival of the Baltimore & Ohio's "William Mason," oldest original locomotive still to operate under its own power, from a four-day celebration tour starting in Hammond, Ind., at the other end of the line; and the introduction of the new six-car, Diesel-hauled "Hoosier," comprising equipment turned out in the railroad's shops from nearly-new Army hospital cars.

When these trains and their important passenger lists arrived safely in New Albany, came the climax of the festivities — a three-hour parade of groups and floats representing almost every association and firm in the city. This was followed by a buffet dinner on the high school lawn given by the railroad to the members of the centennial committees, which was addressed by President Barriger and by Governor Ralph Gates of Indiana.

All Monon Towns Participate

Other Monon towns participated heartily in the Centennial. The "William Mason" took four days to make the 318-mi. trip from Hammond to New Albany, which left plenty of time for long stops at the more important points. The old train was drawn for most of the way by modern service equipment, but was uncoupled outside of the big towns, and drew into the stations on its own, loudspeakers on the rear platform putting out with recordings of the eight songs written especially for the Monon by John A. McGee, director of the centennial. For any sizable town along the Monon, there was held an informal and entertaining "visit," during which the railroad's quartet, dressed in the high collars and vivid arm garters of conductors of the Nineties, and a group of young ladies dressed in hoop skirts, sang the Monon songs, and President Barriger told briefly of the significance of the centennial.

Monon an Institution

A driver of a large truck held up by the Monon parade in New Albany, seeing the banners stretched across the road, spat earnestly and said, "Can you imagine a show like this for a truck line?"

The corollary to the obvious answer is set forth by President Barriger in a prepared address which was scheduled to be presented to the Newcomen Society during its special Monon pilgrimage to French Lick on August 6 and 7:

"In the past 100 years, Monon has not always met the highest ideals of railroad service. It has had shortcomings. But this same friendly road has served the people of Indiana for 100 years, which is, in itself, deserving of recognition. Because, be it human, animal, or mechanical nothing can live for 100 years without having something basically sound within it."

Duluth, Missabe & Iron Range

(Continued from page 61)

generators, rated at 1,000 watts, 32 volts. From such a machine, on each locomotive, power is taken to drive two dynamotors. One dynamotor, which is in operation continuously, generates 300 volts d. c., which feeds the radio receiving equipment. When the engineer presses his push-to-talk switch on his handset, a second dynamotor, in series with the other one, is started to increase the overall voltage to 600 volts to feed the transmitting equipment. This machine starts so quickly that no first syllables are lost.

The train communication equipment on this installation is the Aireon inductive type, furnished by the Railway Radiotelephone & Signals, Inc. The installation and maintenance of the train communication system is under the jurisdiction of the superintendent of telephone, telegraph, and train communication. In order to insure continuity of service, a systematic program of inspection and maintenance has been established. Every two months the radio apparatus on each locomotive and caboose is changed out and taken to the shop for test. This shop includes special electrical instruments such as voltmeters, ammeters, cathode-ray oscillograph and tube testers to make complete detail inspections and adjustments. Each tube is tagged to show the date installed and the dates tested. If not up to a certain standard, it is replaced with a new one. As a result of this program of preventative maintenance, failures of the train communication on the road are rare. The equipment in wayside offices is checked every three months.

Station platform at Zehlendorf-West. Headquarters of the United States Military Government are not far from here and American personnel use the trains in great numbers

I.C.C. Prescribes $2 Per Diem Rate

Increase effective for six months from October 1; also requires railroads to file their car-service rules, finding that industry as whole has failed to furnish adequate car service

FINDING that such an increase will be "reasonable" and will promote greater efficiency in the use and increase the supply of freight cars," the Interstate Commerce Commission has ordered the per diem rate for the rental of freight cars, other than tank and refrigerator cars, raised from $1.25 to $2, effective for six months from October 1. The decision, which drew dissents from Commissioners Miller, Barnard, Patterson and Mitchell, comes at a time when member roads of the Association of American Railroads are voting on a recommendation of the A. A. R. board of directors that the rate be increased to $1.50, effective September 1.

The commission's report was in Docket No. 29670, the investigation instituted by the commission on its own motion to determine whether a $2 rate, or any other increased rate, would increase the supply and promote greater efficiency in the use of cars.

At the same time, the commission, acting in the Docket No. 29669 proceeding, found that although the car service rules published by the Association of American Railroads are not unlawful, the carriers, as a group, have "failed to furnish adequate car supply." It went on to require the railroads to file their car service rules and regulations with the commission, and to hold the proceeding open for "such further action as may be warranted." These findings also brought a dissent from Commissioner Mitchell, while Commissioner Barnard concurred in part.

Differ with Examiners

The commission's findings in the Docket Nos. 29670 and 29669 proceedings differ drastically from those proposed by its examiners. As noted in *Railway Age* of June 21, page 1275, Examiners Witters and Smith recommended that the commission should find that, because a serious box car shortage is imminent, a per diem charge of $5 should be collected on box cars delayed in terminal or switching districts in excess of five days by "delinquent handling." Making a proposed report in the Docket No. 29669 proceeding, Examiner Rice recommended that the commission should not formulate and promulgate car service rules. As reported in *Railway Age*, April 26, page 864, he said that "the commission should find that the views of the participating parties, as expressed in the evidence and on brief, are preponderantly against the proposal."

Dissenting Views

With respect to the per diem proceeding, Commissioner Miller, who was joined in his dissent by Commissioner Barnard, contended that the record affords no basis for an increase in the present per diem for general application and that the $2 charge will not accomplish its intended purpose.

Commissioner Patterson asserted that while the commission finds that the per diem charge for the use of a freight car should be $2, "they make no finding that the present rate of $1.25 is not reasonable and sufficient compensation for the use of a car, although our power with respect to per diem charges is restricted solely to the fixing of such charges as compensation for use of cars."

Commissioner Mitchell said he is "convinced" that the commission is without authority to require any increase "solely as a penalty" and that the specific amount fixed is without support in the record.

In overruling the A. A. R.'s motion to dismiss the proceeding for lack of jurisdiction upon the ground that the Interstate Commerce Act does not authorize the commission to prescribe a per diem charge which contains any element of penalty, the commission commented that a per diem charge for the use of freight cars may be used as an "instrument of regulation" to control the prompt movement and return of cars, adding that "in times of car shortage reasonable compensation for the use of a car may be greater than in periods of car surpluses."

"The Association," it continued, "emphasizes the word 'compensation' and argues that the commission's authority is limited to the terms of compensation for the use of cars and does not embrace a per diem charge which has any element of penalty. The compensation to be paid is merely incidental to and a part of the reasonable rules, regulations and practices with respect to car service which the Commission is authorized to prescribe, and the statute [Section 1(14) (a)] expressly provides for penalties and sanctions for nonobservance of these rules. Furthermore, in determining reasonable 'compensation' we may consider loss of profits, as well as the cost of ownership."

The commission found that while the car service division of the A. A. R. endeavors to promote the direct movement of empty cars from point of release to the nearest loading territory in times of car shortage, the car service rules as they apply to box cars, although not suspended, are not actually being observed and "there is no penalty for their violation."

"In other words," the commission continued, "foreign cars are being appropriated for loading largely in disregard of the car service rules. This probably results in the least empty car mileage in relation to the loaded car miles. From the standpoint of efficiency in the use of cars, this policy cannot be questioned. However, it does not do entire justice to the railroads and to the shippers located on the railroads, which own an adequate supply of cars as compared with other railroads which are not adequately supplied with cars, and are using the cars of foreign lines even for their local traffic, without regard to their expeditious return to the owner."

Delays Not Explained

After reviewing the results of investigations made by its Bureau of Service to the effect that cars have been delayed by the carriers for "various reasons" for periods ranging from 1 to 224 car-days, the commission observed that representatives of the A. A. R. examined about 80 per cent of 259 reports submitted by the bureau and criticized 54 per cent of those examined. It said that while the carriers' testimony showed circumstances indicating that some of the delays reported were unavoidable, many of the delays reported could not be explained.

"From January 30, 1942, to May 19, 1947, we issued 673 service orders of which 354 required the railroads to unload cars," the commission stated. "Each order covered from 1 to 182 cars, some of which were requested by the carriers themselves, covering delays

ranging from 20 days to 3 months. Under section 4 of the uniform bill of lading, carriers have the right to unload cars after the expiration of free time and the costs are chargeable to the owners of the shipments. If the carriers had exercised their right to unload these cars such cars would have been released sooner and would have been available for loading." In this connection, it added that increased demurrage charges have reduced car detention by the shippers.

The commission attributed the present car shortage to post-war demands upon an inadequate and war-depleted car supply. "At the time of the hearing in this investigation, May, 1947, the shortage, insofar as it applied to box cars, was somewhat less than it had been in the previous months of 1947, but this condition was recognized to be temporary and the shortage of box cars was expected to again become acute as soon as the 1947 grain crop began to move," it added. It made that observation after noting that (1) the A. A. R. and several individual roads asserted that per diem charges should be based on cost of ownership, including a return on investment, and that the use of per diem rules for the imposition of a penalty would be unlawful and would necessarily result in great inequity and injustice; and (2) the Chesapeake & Ohio, while suggesting no definite figure, said the commission should increase the per diem to a levy that would cover the full cost of ownership and maintenance of freight cars, thereby expediting their movement and creating an incentive for the railroads to purchase more cars.

No New Rules Proposed

The commission's report observed further that while the railroads deem it impracticable to devise and apply any system of per diem penalties which would distinguish between cases of delinquent handling of cars and cases where efficiency is attained no practical code of rules was proposed by any party which would distinguish between instances of avoidable delay and instances of unavoidable delay in the handling of cars.

"Respondents contend that the per diem rules and demurrage rules are in no sense analogous," the commission said. "Demurrage is not assessed against a receiver or shipper until a reasonable period of time has elapsed. A shipper is not charged demurrage on Sundays or holidays. . . . On the other hand, per diem is paid by a railroad for each calendar day a foreign car is on its line, irrespective of the conditions which account for its presence there. . . . We believe that the per diem rules and charges were and should be designed to furnish some incentive for the prompt movement and return of cars."

Commissioner Mahaffie, in a separate concurring expression, amplified the grounds on which, in his opinion, the order is justified. Contending that a car shortage presently exists and that a more severe one is threatened, he said that "the failure of essential transportation is likely to be one of the most grievous of troubles to an individual shipper," adding that "to the country as a whole, especially if wide-spread and prolonged, it may mean disaster."

"In view of these facts, any scheme that promises even a small measure of relief should have sympathetic consideration," he said. "It is on this theory that I am willing to try increasing per diem on a temporary basis. Per diem charges offer, of course, no complete cure. They apply only to cars off-line, and car delays on home lines are perhaps as frequent as those occurring on foreign lines. An additional consideration is that increases in per diem are likely to augment the earnings of lines already opulent and to shrink those of lines facing financial trouble. It is possible that an increase in per diem may so speed up movement to mitigate this latter difficulty. Unless this does result, the experiment will fail. On the whole, I have reached the conclusion that the plan has enough promise of benefit to make it, under present circumstances, worth trying."

The commission's findings in the Docket No. 29669 proceeding, another investigation instituted by the regulatory body on its own motion, resulted in a "concurring-in-part" opinion from Commissioner Barnard and a dissent by Commissioner Mitchell. Commissioner Patterson did not participate in the disposition of the proceeding.

Although he concurred in the decision of the majority in that the carriers should be required to file their car service rules with commission, Commissioner Barnard advocated elimination of the finding that the respondent roads, as a group, have failed to furnish adequate car service to the detriment of the shipping public. He contended that the evidence of delays in handling of cars and the carrier failures to furnish cars was insufficient to warrant such a finding by the commission.

According to Commissioner Mitchell, however, the case should be decided upon the issue tried out by the parties and not upon other questions on which the parties have not been accorded a full hearing.

"I cannot approve this report because at the hearing one of the presiding commissioners said, and I quote from the record: 'Very concretely, the object of this hearing is to furnish a record on which the commission might arrive at a decision whether or not it should formulate and promulgate car service rules,'" Commissioner Mitchell said. "The parties had a right to rely upon that statement, which was not withdrawn or modified during the hearing. The report directs the railroads to file their rules, but that question was not discussed, because the issue was limited as stated."

The commission said that if it should later appear that conditions might be improved by a modification of, or additions to, the car service rules as so filed, it "can" take action "with that object in view" by (1) informally conferring with railroad representatives; (2) issuing service orders under emergency powers of the Interstate Commerce Act; or (3) entering an order, after hearing, as authorized by Section 1 (14) (a) of the act.

Service Orders Help, But —

The commission said that, on the basis of evidence adduced at the hearing and in response to information and recommendations otherwise received from representatives of the carriers and shippers and from its field agents, it is affording, by means of service orders, under its emergency powers, such assistance in respect of freight car relocation and distribution as the present emergency demands.

"We are convinced," it continued, "that much remains to be accomplished in car detention and movement in order to reach the maximum of practicable efficiency. We believe that such maximum efficiency can be obtained by more wholehearted cooperation by all concerned so as to bring about prompter loading and unloading of cars and greater expedition in their handling, especially within terminal areas. It is, of course, clear that while the present exceedingly heavy demands for cars for loading continues to exceed the available supply, permanent relief from the existing car shortage cannot be had until car manufacturers succeed in filing a large part of respondents' orders for new equipment, but in the meantime shippers and carriers can help themselves in large measure by the exercise of more cooperative efforts."

The commission's report noted that when the supply of freight cars is sufficient to meet current demands, approximately 85 per cent of the units unloaded at points not situated on the owning road are handled in accordance with the car service rules and "compliance with the rules to this extent enables the carriers to maintain their equipment and meet the requirements of the shipping public." "At such periods," it went on, "many of the 15 per cent failures to ob-

(*Continued on page 99*)

GENERAL NEWS

Reed Attacks I.C.C.'s Section 77 Practices

Kansas senator to proceed with hearings, threatens to impeach regulatory body

Asserting that he is "fed up" with the administration by the Interstate Commerce Commission of Section 77 of the Bankruptcy Act and that "if necessary to impeach the . . . commission, I will impeach them," Senator Reed, Republican of Kansas, announced last week that the Senate interstate commerce subcommittee of which he is chairman will proceed to hold public hearings in connection with its investigation of the handling of reorganization proceedings by the commission. Senator Reed is co-sponsor with Senator Myers, Democrat of Pennsylvania, of a Senate bill, S. 249, to set up procedures for the voluntary readjustment of railroad financial structures, including provisions making such procedures applicable to certain railroads already undergoing reorganization as well as to roads not yet in the hands of the court.

Investors "Disheartened" — The bill was left pending on the Senate calendar when the recent session of Congress adjourned, and the House likewise failed to act on a similar bill, H. R. 3980, sponsored by Representative Reed, Republican of Illinois. Senator Reed has called the failure of Congress to enact one of these measures "a most disheartening disappointment to countless thousands of investors."

The senator's attack on the I. C. C. was made at an August 2 press conference in Washington, D. C., when he revealed that his subcommittee had been requested by Senator White, Republican of Maine, chairman of the full committee, to make a study of the commission's practices with respect to railroad reorganizations at "an early date" and "in any event prior to the reconvening of the Congress next January."

"This whole subject of railroad reorganization, and the question of what legislation, if any, should be enacted, has been so controversial during recent years that I feel it to be highly important that such a study and inquiry be made," Senator White said in a letter to Senator Reed. "It is my hope that your subcommittee will be able to examine into these matters and be in position by next January to make a report to the full . . . committee, together with affirmative recommendations as to possible future action by the committee and subsequently by the Congress."

Public Interest Disregarded — In making public the White letter, Senator Reed charged that the commission has "grossly disregarded the obligations it owes the public interest in handling railroad reorganizations." To support the charge he referred to and elaborated upon a statement he made in the Senate on July 26, outlining the case of the St. Louis-Southwestern, which has emerged from bankruptcy with the stockholders' equities preserved despite the fact that the commission-approved plan of reorganization for the road would have wiped out such equities. As noted in the *Railway Age* of August 2, page 49, the road and its trustee, Berryman Henwood, have successfully carried out a program for dismissal of the reorganization proceeding and return of the road to its stockholders, thus accomplishing voluntarily what S. 249 and H. R. 3980 would require with respect to certain other roads undergoing organization.

Senator Reed conceded that the Cotton Belt was "clearly insolvent" when its reorganization proceeding was launched in 1935; but he pointed out that it became solvent as a result of its wartime earnings. And he also said that, on the basis of such "huge wartime earnings," the commission should have reconsidered the plan. The senator went on to assert that under other commission-approved plans, more than $700 million in par value of securities and claims will be wiped out in reorganizations of such roads as the Missouri Pacific, Rock Island, and New Haven; and another "one-fourth billion" will be "impaired in quality." "Several hundred thousand of our citizens will suffer these unjustifiable losses in their investments," he added. "Congress alone can stop it."

Justice Preferred to Speed—Senator Reed also made public an August 1 statement signed by himself, Senator Myers, Representative Hobbs, Democrat of Alabama, and Representative Reed. After reviewing railroad reorganization developments of recent years, including President Truman's pocket-veto of the bill (similar to S. 249 and H. R. 3980) which was

(*Continued on page 74*)

6 Months' Net Income Totaled $204,000,000

Net railway operating income for the same period was $368,422,994

Class I railroads in the first six months of this year has an estimated net income, after interest and rentals, of $204,000,000, as compared with a deficit of $20,600,000 in the corresponding period of 1946, according to the Bureau of Railway Economics of the Association of American Railroads. The six-months' net railway operating income, before interest and rentals, was $368,422,994, as compared with $154,762,587.

Estimated results for June showed a net income of $35,500,000, as compared with $14,872,000 in June, 1946, while the net railway operating income for the 1947 month was $60,201,057, as compared with $37,824,952 in June, 1946. In the 12 months ended with June, the rate of return averaged 3.69 per cent, compared with 2.02 per cent for the 12 months ended with June, 1946.

Gross in the six months totaled $4,149,898,400, compared with $3,577,596,732 in the same period of 1946, an increase of 16 per cent. Operating expenses amounted to $3,248,235,715, compared with $3,085,405,036, an increase of 5.3 per cent.

Thirty-three Class I roads failed to earn interest and rentals in the six months, of which 14 were in the Eastern district, seven in the Southern region and 12 in the Western district.

In the East—Class I roads in the Eastern district in the six months had an estimated net income of $72,000,000, compared with a deficit of $54,000,000 in the same period of 1946. For June, their estimated net income was $18,000,000, compared with a deficit of $134,000 in June, 1946.

These same roads in the six months had a net railway operating income of $152,089,983, compared with $23,518,291 in the same period of 1946. Their net railway operating income in June amounted to $30,-

CLASS I RAILROADS—UNITED STATES

Month of June	1947	1946
Total operating revenues	$696,908,689	$611,998,248
Total operating expenses	550,057,087	517,363,043
Operating ratio—per cent	78.93	84.54
Taxes	72,653,480	44,664,691
Net railway operating income	60,201,057	37,824,952
Net income, after charges (estimated)	35,500,000	14,872,000
Six Months Ended June 30, 1947		
Total operating revenues	$4,149,898,400	$3,577,596,732
Total operating expenses	3,248,235,715	3,085,405,036
Operating ratio—per cent	78.27	86.24
Taxes	451,570,562	266,428,223
Net railway operating income	368,422,994	154,762,587
Net income, after charges (estimated)	204,000,000	Def. 20,600,000

976,317, compared with $12,371,980 in June, 1946.

Gross in the Eastern district in the six months totaled $1,919,254,060, an increase of 22.7 per cent compared with the same period of 1946, while operating expenses totaled $1,533,391,158, an increase of 9.3 per cent.

South and West—Class I roads in the Southern region in the six months had an estimated net income of $32,000,000, compared with a deficit of $1,600,000 in the same period of 1946. For June, they had an estimated net income of $2,500,000, compared with a deficit of $994,000 in June, 1946.

Those same roads in the six months had a net railway operating income of $56,921,937, compared with $30,684,374 in the same period of 1946. Their net railway operating income in June amounted to $7,372,396, compared with $3,776,394 in June, 1946.

Gross in the Southern region in the first six months totaled $598,771,162, an increase of 11.6 per cent compared with the same period of 1946, while operating expenses totaled $467,407,574, an increase of 3.3 per cent.

Class I roads in the Western district in the six months had an estimated net income of $100,000,000, compared with $35,000,000 in the same period of 1946. For June, they had an estimated net income of $15,000,000, compared with a net income of $16,000,000 in June, 1946.

Those same roads in the six months had a net railway operating income of $159,411,074, compared with $100,559,922 in the same period of 1946. Their net railway operating income in June amounted to $21,852,344, compared with $21,676,578 in June, 1946.

Gross in the Western district in the six months totaled $1,631,873,178, an increase of 10.5 per cent compared with the same period of 1946, while operating expenses totaled $1,247,436,983, an increase of 1.4 per cent above 1946.

Emergency Boards Appointed

President Truman has appointed emergency boards to investigate working-rules disputes which brought recent strike threats to the Terminal of St. Louis and the River Terminal. The employees involved are represented, respectively, by the Brotherhood of Railway Clerks and the Brotherhood of Railroad Trainmen.

Ex-Barge Grain Differential Ordered Off

Acting in compliance with Supreme Court's March 31 decision in the so-called Ex-Barge Grain case, the Interstate Commerce Commission has ordered the railroads to cease and desist from maintaining proportional rates on ex-barge grain from Chicago to eastern destinations which are differentially higher than those applicable on ex-lake and ex-rail grain. The proceeding is I. & S. Docket No. 4718, and the commission's order was dated July 25.

The Supreme Court's decision was noted in the *Railway Age* of April 5, page 706. The issue related to the rail rates on grain from Chicago to eastern destinations after it had been transported to Chicago from the west by connecting rail or water carriers. The through rates are combinations of rates for the movement west of Chicago and the proportional or "reshipping" rates east thereof. The court ruled adversely with respect to a commission decision which permitted the publication of tariffs fixing the proportionals on ex-barge grain 3 cents per 100 lb. higher than the ex-rail and ex-lake proportionals.

Green Cotton Belt President

Colonel Frederick W. Green, chief executive officer of the St. Louis Southwestern since last October, was elected president of that road on August 6. A photo of Colonel Green and a feature article outlining his career appeared in the *Railway Age* of November 2, 1946, page 728, in connection with his promotion to chief executive officer.

Tennessee Intrastate Rates

Acting upon the petition filed recently by railroads operating in Tennessee, the Interstate Commerce Commission has instituted an investigation into the refusal of the Railroad and Public Utilities Commission of that state to permit intrastate freight rate increases in line with the Ex Parte 162 interstate adjustment. The proceeding is docketed as No. 29800, and hearings will be held before Examiner Fred L. Sharp at Nashville, Tenn., on September 4.

Airport Program

T. P. Wright, administrator of the Civil Aeronautics Administration, has approved a revised federal-aid airport program to be undertaken from funds appropriated for fiscal years 1947 and 1948, $45,000,000 and $32,500,000, respectively, which have been merged to be administered as one fund. The C. A. A. announcement explained that the revision "is designed to adjust the $65,000,000 program for 1948, submitted to Congress in February, to the actual appropriation of $32,500,000, and to reallocate some 1947 funds not used as planned."

The program calls for the construction or improvement of 908 airports at an estimated cost to the federal government of $66,569,590, with local or state sponsors providing an additional $70,235,095. The 908 projects include 896 in continental United States and 12 in the territories and Puerto Rico.

T. & N. O. Depreciation Rates

Equipment depreciation rates for the Texas & New Orleans are among those prescribed by the Interstate Commerce Commission in a recent group of sub-orders in the general proceeding, Depreciation Rates for Equipment of Steam Railroad Companies. The T. & N. O. rates are: Steam locomotives—owned, 2.58 per cent, leased, 2.97 per cent; gasoline locomotive, 5.46 per cent; Diesel locomotives, 3.96 per cent; freight-train cars—owned, 2.75 per cent, leased, 3.65 per cent; passenger-train cars—owned, 2.88 per cent, leased, 2.97 per cent (standard equipment and 3.94 per cent (light-weight equipment); work equipment, 3.88 per cent; miscellaneous equipment, 12.49 per cent.

Ex Parte 162 Orders

The Interstate Commerce Commission has denied a railroad petition for modification of its findings and order in the Ex Parte No. 162 proceeding so as to allow the application of a separate increase to each separate factor of a combination or multiple-factor rate. The finding which the commission refused to modify was No. 5 in the report of December 5, 1946, which read as follows: "Where through rates are made by combining separately stated rates (two-factor or multiple-factor rates), such combination will not be increased separately, except as otherwise provided as to rates on grain and grain products, but a single increase should be applied to the entire through rate."

Also, the commission has suspended from August 1 until February 29, 1948, the operation of certain schedules whereby the railroads propose to cancel the Ex Parte 162 increase of 15 per cent on milk or cream. "This cancellation," the commission's notice said, "would have resulted, in some instances, in the application of higher general increases." The suspension order docketed the proceeding as I. & S. No. 5515.

Hobbah Heads Rutgers' New Transport Department

Rutgers University has announced the establishment at its Newark, N. J., School of Business Adminstration of a department of transport, to be in charge of Dr. Reginald V. Hobbah. Dr. Hobbah was research economist with the Air Transport Association and during the war had a similar post with the War Production Board. He has been in the employ of the New York, New Haven & Hartford and the Chicago & Eastern Illinois, and in 1932 he entered the teaching field at the University of Pittsburgh.

"Century" to Have Continuous Radio Phone Service

The New York Central has announced that, beginning in October, two-radio telephone service will be available between New York and Buffalo, N Y., in each direction on its "Twentieth Century Limited," in connection with the Bell System's radio telephone system, making it possible to carry on conversations between the moving train and any telephone connected with the Bell System. As soon as additional Bell radio stations are in service, probably by the end of the year, the service will be extended from Buffalo to Chicago. The road has disclosed its intention to extend the service to principal trains serving Detroit, Mich., and other midwestern cities as soon as technical details are perfected.

The New York Central installation will operate on the 30-44 megacycle band as-

signed to general highway mobile radio use, unlike the Pennsylvania and Baltimore & Ohio installations in the New York-Washington, D. C., territory (reported in *Railway Age* of August 2, page 56) which employs the 152-162 megacycle band assigned to urban service. Transmission from the "Century" will be on 43.66 megacycles, while transmission to the train will be on 35.66 megacycles. Arrangements on rates have not yet been completed.

New Haven Opens Washington Ticket Office

The New York, New Haven & Hartford on August 1 opened a Washington, D. C., ticket office at 624 Fourteenth street in that city. Furman W. Richards, district passenger agent, is in charge.

Approves "National System of Interstate Highways"

Routes selected by state highway departments for inclusion in the "national system of interstate highways" have been approved with few changes by the federal works administrator, Major General Philip B. Fleming, the Public Roads Administration of the Federal Works Agency announced on August 2.

The system, the P. R. A. statement said, comprises the "most heavily traveled highways in the present federal-aid system, and includes extensions of the system through urban areas." It consists of north-and-south, east-and-west, and diagonal routes "that will make it possible to travel from any section of the country to any other section by a direct route."

The system contains 37,681 miles of the country's principal highways, including 2,882 miles of urban thoroughfares. Additional urban circumferential and distributing routes are to be designated later, and 2,319 miles have been reserved for these routes. The accompanying map shows the general location of all routes. Principal cities to be connected are indicated but details of the exact location are left for determination as construction projects are planned.

The system reaches 42 state capital cities and will serve directly 182 of the 199 cities in the country having a population of 50,000 or more persons. In recommending routes for inclusion, state highway departments were governed by provisions of the Federal-aid Highway Act of 1944, which required that "there shall be designated in the continental United States a national system of interstate highways not exceeding 40,000 miles in extent, so located as to connect by routes as direct as practicable the principal metropolitan areas, cities and industrial centers, to serve the national defense and to connect at suitable border points with routes of continental importance in the Dominion of Canada and the Republic of Mexico."

The act authorized $500,000,000 in each of the three fiscal years following the war to assist the states in developing a three billion dollar highway program which would include improvements on the regular federal-aid system, on highways in urban areas where the population is 5,000 or more, and on a federal-aid system of secondary or farm-to-market roads in each State. The sum of $225,000,000 was set aside from the authorized annual appropriation for improvements on highways in the regular federal-aid system; $125,000,000 was made available for urban sections of the system only, including expressways, circumferential and distribution routes; and $150,000,000 was earmarked for state systems of secondary roads.

Proposed national system of interstate highways

No specific sum was provided for development of the national interstate system; but P. R. A. said that "since the system is made a part of the federal-aid system, the amounts provided for this system are available for the interstate system." The appropriations authorized have already been apportioned among the states. In most states half of the cost of federal-aid projects and up to one-third of the cost of right-of-way may be financed by the federal government. The exceptions are states containing large areas of land in the public domain where a higher rate of Federal participation is permitted.

"Although the new interstate system follows, in general, the principal routes in the present federal-aid system, it may be necessary in many instances to relocate existing highways or build alternate routes for express traffic in order to meet essential standards of width, grade, alinement, and control of access," Public Roads Commissioner Thomas H. MacDonald said. The P. R. A. statement added that routes included in the system, as well as the adopted standards of design and construction, conform "in broad outline" to recommendations contained in the report submitted to President Roosevelt in 1944 by the National Interregional Highway Committee of which Commissioner MacDonald was chairman.

C. & N. W.—U. P. Begin First R. R. Television Program

The Chicago & North Western and the Union Pacific jointly inaugurated America's first regular railroad-originated television program on July 22 at the North Western station in Chicago. The program, known as "Streamliner Parade," is televised over station WBKB, Chicago, from 7:00 to 7:20 p.m. (C.S.T.) each Tuesday, just prior to departure of the "City" streamliners. The program features interviews with passengers boarding the trains, many of whom are prominent in the entertainment field. As the program closes, the departing "City of Los Angeles" is visible in the background.

B. & O. Buys 13 Locomotives from Boston & Maine

The Baltimore & Ohio has announced the purchase of 13 Mountain-type locomotives from the Boston & Maine. Each of these engines has a tractive force of 67,000 lbs., a tender capacity of 21 tons of coal and 20,000 gal. of water. Delivery of the locomotives, which will be placed in high-speed freight service between Chicago and New Castle, Pa., will begin within a few days and will be completed in two weeks.

Freight Car Production Seen Totaling 10,000 Next Month

Production of new freight cars is expected to total 10,000 units monthly starting in September, it was announced in Washington, D.C., last week following a meeting of representatives of the car builders, railroads and steel companies, at which time the latter reaffirmed their pledge to supply sufficent steel to meet that quota. As noted in *Railway Age,* August 2, page 58, the meeting had been called by Senator Reed, Republican of Kansas, as a result of reports he had received that the July output would be less than anticipated.

Senator Reed, who earlier this year headed an investigation by a subcommittee of the Senate committee on interstate and foreign commerce into the freight car shortage, predicted following the meeting that the railroads and car builders will turn out 7,000 new cars in August. At the same time, he said that an increase in per diem from $1.25 to $1.50, now under consideration by member roads of the Association of American Railroads, also would tend to boost the car supply.

According to Senator Reed, 26,569 United States-built freight cars were ex-

ported to Mexico and abroad during the first six months of 1947, including "over 6,000" in March and 1,013 in June. Asserting that the car builders accepted export requisitions in order to "keep going," he confidently stated that the car supply situation in the United States would begin to show improvement now that the domestic roads have 110,000 cars on order and expect to order 30,000 more within the near future.

Senator Reed said that the Butler, Pa., shop of the Pullman-Standard Car Manufacturing Company was receiving, as of July 26, only enough steel to produce new cars at one-half of its total capacity, but as a result of the conference is expected to average 2,400 cars monthly, starting in September. He added that railroad shops, which produced 900 cars in July, are scheduled to turn out 1,500 "or better" of the 10,000 cars each month.

Senator Reed said that "unbalanced inventories" in the shops of the car builders and railroads and the shortage of component parts, principally plates and sheets, were primary reasons for the decrease in production during July. Declaring that the inventory situation is now being "cured," he said that those attending the conference agreed that Colonel J. Monroe Johnson, director of the Office of Defense Transportation, should act as a "coordinator" in channeling to the car builders and railroads the specific materials which they need to complete their orders.

Noting further that it takes approximately 164,000 tons of steel to construct 7,000 freight cars, Senator Reed said that the steel companies delivered, from March through June, 202,590 tons of steel monthly to the car builders and railroads. Of that total, he said the railroads received 60,000 tons monthly for the construction of new cars and maintenance and repair purposes.

In addition to representatives of six car building companies and 11 steel companies, others attending the conference included William T. Faricy, president of the A.A.R.; W. C. Kendall, chairman of the A.A.R.'s Car Service Division; J. H. Aydelott, vice-president, operations and maintenance, A.A.R.; S. M. Felton, president, American Railway Car Institute; Colonel Johnson; G. Metzman, president, New York Central; R. B. White, president, Baltimore & Ohio; and numerous other railroad officers.

The statement made at the conference by Mr. Felton indicated that producing in June, including freight cars built by the railroads, amounting to 5,527 cars, the highest since May, 1942. He said that although the "car building situation still is not good," the car builders expected to turn out approximately 5,000 cars in July, as compared with 4,230 in June. Together with the 900 cars turned out by the railroads last month, he said he expected the July total to exceed that of the previous month.

Mr. Felton contended that the car builders' problem is, as it was in February, the same as that which many other industries are facing, namely the shortage of materials, principally steel. "Only last week," he continued, "the newspapers reported a lay-off of 115,000 General Motors production workers 'because of a critical steel shortage.' And while this is the most spectacular instance, you are well aware that industry after industry is wrestling with the same problem of getting steel. There just isn't enough to supply the current demand."

Stating that the railroads have ordered sufficient cars in recent months to make feasible longer production runs, Mr. Felton at the same time told the conference while the materials situation has improved, it is still "spotty" and "deliveries of steel in many instances have not come up either to our hopes or expectations."

Reed Attacks I. C. C.'s Section 77 Practices

(*Continued from page 71*)

enacted last year, the statement asserted that "while the desirability of concluding pending reorganizations and returning the properties to private management is fully recognized, it is of vastly greater public importance that justice be done and that investments in our railroads be not needlessly destroyed or seriously impaired merely for haste."

"In fact," it continued, "haste at this juncture will cause a great deal indeed to be uselessly sacrificed. The properties of the various railroads are being operated with reasonable efficiency, although not with all the esprit de corps of private management. But the public interest in any event is being fully protected as to service. Where the public interest is not being protected is in the attempted consummation of reorganization plans which wipe out, unnecessarily and unjustly, wide segments of capital and disrupt others. The result is that a great deal of potential capital which might be devoted to public use in our railroad systems is being scared away. This is one of the greatest hidden sacrifices inherent in these plans, and one of the compelling reasons in the public interest why these plans should be arrested. Delay of this kind is constructive, desirable and will promote public welfare."

Wants Plans Held Up—The statement also expressed the hope that the courts and the commission would take no further steps toward the consummation of pending plans of reorganization that "may place such plans beyond the reach of Congressional remedy"; and that they would "cooperate with the Congress and the President" in retaining custody of such properties until Congress has acted on S. 249 and H.R.3980. It contends further that enactment of such legislation would not "cast aside the work done thus far in those reorganizations, but rather will enable a fair and equitable capital structure to be built upon the foundation of the records already made in those proceedings, supplemented by unassailable proof in the subsequent vast improvement in the financial affairs and demonstrated earning power of those carriers."

The congressmen also said that because governmental agencies are "largely responsible" for the "drastic character" of pending reorganizations, they (the congressmen) are "confident" that Congress will favorably consider measures intended to remedy policies initially put into effect by one of its own agencies, namely the commission. "In general," they continued, "the courts have declined to give full judicial review to the plans and policies of the commission, stating that only Congress can so direct or otherwise grant relief. We believe Congress will act again upon this suggestion, as it did last year . . ."

"It is a matter of common knowledge . . . that the principal railroads affected by [S. 249 and H. R. 3980] are doing as well in many respects, and better in some, than a great many other railroads. The obvious injustice and inequity of rushing the innocent security-holders of these railroads 'to the guillotine' . . . before Congress has an opportunity of passing on measures to review and correct the policies under which those holders were 'condemned' by governmental fiat, will surely be recognized."

Southern to Modernize 24 Passenger Cars

A passenger car modernization program costing over $500,000 has been announced by the Southern. The program, scheduled for completion within the next six to eight months, involves the installation of air-conditioning, reclining seats and other modern equipment in 24 steel coaches and passenger-baggage cars. The work will be done at the road's own shops in Chattanooga, Tenn., and Spartanburg, S. C.

Appropriation Bills Signed

President Truman last week signed several appropriation bills on which Congressional action was finally completed during the closing days of the recent session. The delayed acts carry appropriations for the fiscal year 1948, which began July 1, but "stop-gap" legislation was meanwhile enacted to provide the government agencies with funds for their July operations.

The final version of the Independent Offices Appropriation Act carries a total of 10,743,000 for the Interstate Commerce Commission. This is $220,300 more than the $10,522,700 appropriated for the commission during the past fiscal year ended June 30, but it is $1,155,000 less than the $11,898,000 recommended in the President's budget for fiscal 1948. The $10,743,000 total includes $9,000,000 for "general expenses," $908,000 for railroad safety work, $605,000 for locomotive inspection, $200,000 for printing and binding, and $30,000 for penalty mail costs.

The act also carries $264,000,000 for the Public Roads Administration, which is $36,288,854 less than the $300,388,854 recommended by the Bureau of the Budget and $11,838,792 less than P.R.A.'s fiscal 1947 appropriation of $275,838,792. The latter, however, included $30,838,792 for the "strategic highway network," repair of war and emergency damage in Hawaii, the Inter-American highway and "access roads," work for which no fiscal 1948 appropriations were sought. Thus the fiscal 1948 appropriation includes $97,711,146 more than was allowed in fiscal 1947 for the federal-aid post-war highway program, i.e., $247,711,146 as compared with $150,000,000.

The act carries no specific appropriation for grade-crossing elimination and protection work in fiscal 1948, but P.R.A. officials explained at Congressional hearings on the measure that funds for such work are not cut off. The law with respect to the past-war program provides that up to 10 per cent of the funds made available for highways may be used for grade-crossing work.

The final version of the supplemental appropriation act for fiscal 1948 carries $400,000 for Office of Defense Transportation operations until February 28, 1948. As noted in the *Railway Age* of August 2, page 53, the President's powers to allocate railroad equipment and facilities under which O.D.T. functions had previously been extended until that time. As reported in the issue of July 26, page 98, the President previously signed the Labor-Federal Security Appropriation Act which provides funds for the Railroad Retirement Board, the National Mediation Board and National Railroad Adjustment Board.

The War Department Civil Functions Appropriation Act provides $116,718,700 for maintenance and improvement work on rivers and harbors. That total includes $37,176,700 for new construction, $50,000,000 for maintenance, $20,000,000 for operation and care, and $3,500,000 for advance planning.

The so-called government corporations appropriation act fixes limits on amounts to be spent for administrative purposes by such corporations among which is the Inland Waterways Corporation, operator of the Federal Barge Lines. Subject to the limits fixed for administrative expenses, the act approves the budgets submitted by the corporations, and corporations retain control of their revenues and expenses. The act limits the fiscal 1948 administrative expenses of I.W.C. and its subsidiary, the Warrior River Terminal Company, to $418,100 and $20,100, respectively. These are the amounts proposed in the President's budget, which also showed I.W.C.'s "direct operating expenses" for fiscal 1948 at $8,572,188 and those of Warrior at $311,800.

Government Seeks Reparations on Steel Landing Mat Rates

The Department of Justice continued to assail the railroads' war-time freight rates last week when it filed another complaint with the Interstate Commerce Commission in whch the government seeks recovery of alleged overcharges made by the carriers for transporting during the war "thousands of carloads" of steel airplane landing mats from eastern origins to Pacific Coast points. According to the complainant, five different types of steel landing mats, of which the average carload shipment weighed approximately 120,000 lb., were shipped over the defendants' lines.

Commenting on the complaint, Attorney General Clark said that "for a great many years, the railroads have given substantially equal rates to hundreds of articles made from iron and steel, even though many of the articles are dissimilar." "The steel landing mats involved here were not dissimilar to many iron and steel articles given more favorable rate treatment in the railroads' tariffs; yet in the midst of the war the railroads refused the government's request for rates on these landing mats equal to those accorded other articles made from iron and steel," he continued "Accordingly, the government was required to pay, in many instances, more than six times as much as any other shipper for the equivalent transportation of similar iron and steel articles."

Assistant Attorney General J. F. Sonnett, in charge of the Justice Department's antitrust division, said that "by the simple expedient of refusing to include steel landing mats, by name, in the comprehensive 'iron or steel articles' sections of their published commodity tariffs, the defendant railroads forced the application of high class rates which were inappropriate and clearly unreasonable for this traffic."

The Pennsylvania Opens X-Ray Laboratory at Altoona

The Pennsylvania announced on July 29 the opening of a new X-ray laboratory at Altoona, Pa., for examining for defects the structural metals used in locomotives, cars and rails. The laboratory building, constructed with solid concrete walls 18-in. thick to permit the use of 2,000,000-volt X-ray machines, includes a dark room in which the radiographs are developed and projection equipment for showing enlarged views of the X-ray photographs.

A mobile 250,000-volt machine is now in operation and it is planned to install a permanent unit of 1,000,000-volt capacity. The mobile equipment is for use both in the laboratory and in the adjacent construction and repairs shops.

Arbitration Board Hearings Begin on Wage Case

The six-man arbitration board appointed to settle the demand of the railroad non-operating employees for a 20-cent hourly wage increase began hearings in Chicago August 4. The board chose Dr. William M. Leiserson and Robert D. Calkins, neutral members of the board, as chairman and vice-chairman, respectively. The first day of proceedings was devoted to organizational routine.

At the session on August 5, Lester P. Schoene, counsel representing the members of the seventeen non-operating brotherhoods, presented their opening statement, declaring that the productivity of these employees had increased while their relative wage standing with 25 selected industries, as reported by the National Industrial Conference Board, had declined. Because a railroad employee plays an integrated part in the American economy, Mr. Schoene contended, his wages should not be set aside or considered separately—there should be an equitable adjustment of wages among all the groups. Counsel for the unions further stated that the ability of the carriers to pay a fair and equitable wage was a matter committed primarily to the Interstate Commerce Commission, and that that ability should not be the concern

The 250,000-volt mobile X-ray machine at the Pennsylvania new X-ray laboratory at Altoona, Pa., is shown making a radiograph of a freight-car truck side frame

of the arbitration board in determining what is a fair and equitable wage.

E. H. Burgess, counsel for the carriers' wage committees, showed the board that the employees recently had made three major gains; namely, the 16-cent hourly increase made effective retroactively to January 1, 1946; the 2½-cent hourly increase made effective May 22, 1946; and the greatly increased social benefits made available to them through the provisions of the Crosser Act, made effective January 1, 1947. Mr. Burgess told the board that postwar weekly earnings of the non-operating employees exceeded those of employees in other industries, even in the face of the fact that non-skilled workers comprise a greater percentage of the railroad group than the outside group. "Railroads pay their office boys and 'bobby-sox" messengers more per annum than the national average for school teachers," Mr. Burgess stated.

George E. Leighty, president of the Order of Railroad Telegraphers and chairman of the employee's national conference committee, took the witness stand and reviewed the history of the wage case before the board, and the proceedings resolved primarily into a question of whether or not inequities did exist between the railroads and the 25 selected outside industries, as oppositely contended by the two parties.

The session of August 6 was devoted to the introduction of employees' exhibits and witnesses.

I.C.C. Claims Authority Over Rent for Cars of Non-Shippers

The Interstate Commerce Commission has found that the Transportation Act of 1940 amended section 1(14)(a) of the Interstate Commerce Act to give the commission authority to determine the compensation to be paid by railroads for the use of freight cars owned by non-shippers. The determination came in a report by the commission's Division 3 in a proceeding (No. 29542) involving the complaint of the Keith Railway Equipment Company against the reduction from 1.5 cents to 1.25 cents in the mileage rate on privately-owned tank cars which was in effect from August 15, 1943, until November 1, 1945.

The Keith complaint, directed against the Association of American Railroads and its member roads, was filed in the United States District Court for the Northern District of Illinois in March, 1945. It alleged that the railroads' action in reducing the mileage rates paid for use of Keith cars was in violation of the Sherman Anti-Trust and Clayton acts, and sought an award of triple damages. The court stayed the proceedings before it and directed the complainant to obtain a commission determination. Keith then filed a complaint with the commission, but its prosecution of that complaint has thus far been confined to its challenge of the commission's jurisdiction.

In claiming jurisdiction the commission noted that section 1(14)(a), which formerly gave it authority over the compensation paid by a railroad for the use of a locomotive, car or other vehicle "not owned by the carrier using it," was amended in 1940 by the addition of "(and whether or not owned by another carrier)." By reference to Congressional committee reports on the legislation, the commission found evidence that this phrase was designed "to make it clear that the commission's jurisdiction with respect to car service and the compensation to be paid for the use of any car not owned by the carrier using it includes a car of private as well as of carrier ownership."

Even prior to this amendment, as the division's report pointed out, the commission had claimed authority over the compensation paid by railroads for the use of shipper-owned cars. This claim, asserted in 1939 in *Refrigerator Car Mileage Allowances, 232* I. C. C. *276*, was based on the power which section 15(13) gives the commission over allowances paid to shippers.

Because Keith confined its presentation to the jurisdictional question, the commission's report said that the proceeding will be assigned for further hearing on the matter of the reasonableness of the assailed mileage rate.

Air Lines Authorized to Reduce Freight Rates 25 Per Cent

Acting upon a petition filed last month, the Civil Aeronautics Board last week authorized 19 domestic scheduled air lines to reduce their freight rates by 25 per cent. The air lines' proposals before the C. A. B. were outlined in *Railway Age* of July 19, page 66.

The new rates reduce the tariffs from approximately 26.5 cents per ton-mile to 20 cents per ton-mile with a spread ranging from 33 cents per ton-mile for small packages moving a short distance to 14 cents for plane-loads of 16,000 pounds. According to the C. A. B., the principal opponent to the new rates was the Air Freight Forwarder Association, which contended in part that the reduced tariffs were designed to destroy the opportunity for air freight forwarders to make use of scheduled air line services.

Discuss Possible Merger of Frisco and G. M. & O.

A study of the benefits to be gained by a consolidation of the St. Louis-San Francisco and the Gulf, Mobile & Ohio is now in progress, it was announced jointly this week by Clark Hungerford, president of the Frisco, and I. B. Tigrett, president of the G. M. & O. The Frisco operates nearly 5,000 mi. of lines in nine midwestern, southwestern and southeastern states. The G. M. & O., which merged with the Alton in June, is a 3,000 mi. system extending from Chicago to the Gulf coast.

Freight Car Loadings

Loadings of revenue freight for the week ended August 2 totaled 921,591 cars, the Association of American Railroads announced on August 7. This was an increase of 1,663 cars, or 0.2 per cent, above the previous week, an increase of 23,200 cars, or 2.6 per cent, above the corresponding week last year, and an increase of 57,681 cars, or 6.7 per cent, above the comparable 1945 week.

Loading of revenue freight for the week ended July 26 totaled 919,928 cars, and the summary for that week as compiled by the Car Service Division, A.A.R., follows:

Revenue Freight Car Loading

For the Week Ended Saturday, July 26

District	1947	1946	1945
Eastern	162,336	162,226	159,002
Allegheny	191,193	191,327	197,214
Pocahontas	71,209	73,861	59,989
Southern	131,405	137,046	126,098
Northwestern	146,311	137,991	131,315
Central Western	144,998	140,278	138,763
Southwestern	72,476	67,784	74,049
Total Western Districts	363,785	346,053	344,127
Total All Roads	919,928	910,513	886,430
Commodities:			
Grain and grain products	72,927	59,121	67,849
Livestock	12,414	17,962	14,353
Coal	177,907	188,293	173,197
Coke	14,008	13,827	14,316
Forest products	51,194	51,600	46,213
Ore	88,535	72,322	76,258
Merchandise l.c.l.	112,259	120,931	103,557
Miscellaneous	390,684	386,457	390,687
July 26	919,928	910,513	886,430
July 19	919,734	921,496	882,648
July 12	806,961	895,082	883,543
July 5	629,204	679,775	726,663
June 28	846,141	879,544	893,947
Cumulative total, 30 weeks	24,946,387	22,422,728	24,657,830

In Canada.—Car loadings for the week ended July 26 totaled 79,848 cars as compared with 77,286 cars for the previous week and 70,266 cars for the corresponding week last year according to the compilation of the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
July 26, 1947	79,848	34,446
July 27, 1946	70,266	34,728
Cumulative totals for Canada:		
July 26, 1947	2,175,841	1,100,592
July 27, 1946	2,001,708	1,013,104

Daily "City of San Francisco"

On September 1, the "City of San Francisco", owned and operated by the Union Pacific, Chicago & North Western and the Southern Pacific, will begin daily service between Chicago and San Francisco, Cal., A. T. Mercier, president of the S. P., announced this week. The train is presently operating three times weekly.

Service Order Violation Results in $700 Fine to I. C.

The Interstate Commerce Commission has been informed by the United States District Court for the Eastern District of Illinois that judgment totaling $700 and costs was entered in favor of the government and against the Illinois Central on July 29. The court action was the result of a civil suit alleging violation of a commission service order prohibiting the use of standard "RS" type refrigerator cars for the transportation of empty beer containers, without the carrier having first obtained the necessary permits.

A list of current publications appears on page 99.

Equipment and Supplies

Freight Car Production Totals 5,879 in July

The upward trend in freight car production for domestic use continued in July when deliveries totaled 5,879 units, including 1,033 from railroad shops, compared with June deliveries of 5,527 units, including 1,297 from railroad shops, it has been announced by The American Railway Car Institute. The number of cars on order and undelivered on August 1 was 117,592, including 30,074 on order with railroad shops. Freight cars ordered during July amounted to 14,865, including 2,025 ordered from railroad shops, compared with June orders for 13,084, including 3,000 ordered from railroad shops, the Institute said.

SIGNALING

THE AMERICAN LOCOMOTIVE COMPANY has ordered 12 sets of intermittent inductive train control equipment from the General Railway Signal Company for installation on Diesel-electric locomotives for the New York Central. Two sets are for passenger locomotives, and 10 sets are for freight locomotives.

THE UNION SWITCH & SIGNAL CO. is furnishing seven sets of intermittent inductive automatic train stop equipment for installation on new steam locomotives which are being built for the Pittsburgh & Lake Erie. This equipment is similar to that now in service on P. & L. E. locomotives and is to be operated in the automatic train stop territory between Pittsburgh, Pa., and Youngstown, Ohio.

The LEHIGH VALLEY has ordered materials from the General Railway Signal Company for the installation of an all-relay electric interlocking at Tifft Junction, N. Y. The control machine, to be located at Niagara Junction, will have an 18 by 42-in. panel equipped with 29 track indication lights and 32 levers for the control of the existing all-relay electric interlocking at Niagara Junction as well as the new signaling at Tifft Junction. The Tifft Junction signals and switches will be controlled by the Type H 2-wire coded system.

PASSENGER CARS

The NEW YORK CENTRAL has purchased 200 troop sleeping cars from the War Assets Administration. This equipment, the company reveals, will probably be transformed into baggage cars.

FREIGHT CARS

The READING has ordered 1,000 50-ton 40½-ft. steel box cars from the American Car & Foundry Co., to be built at the Berwick, Pa., plant. Delivery of this equipment is scheduled for the first quarter of 1948. An inquiry for these cars was reported in the *Railway Age* of July 12, page 71.

The CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC has ordered 1,000 50-ton hopper cars from the Pressed Steel Car Company. Inquiry for this equipment was reported in the *Railway Age* for May 3.

The NORTHERN STATES POWER COMPANY has ordered four 70-ton triple hopper cars from the American Car & Foundry Co., to be built at the latter's Huntington, W. Va., plant.

ARMOUR & CO. has ordered 2,000 40-ton 40-ft. steel refrigerator cars, allocating 1,000 each to the General American Transportation Corporation and the American Car & Foundry Co. Delivery of these cars is scheduled to begin in the first quarter of 1948.

The UNION PACIFIC has ordered 1,600 50-ton box cars from The Pullman-Standard Car Manufacturing Company to be delivered in the first quarter of 1948. An inquiry for this equipment was reported in the *Railway Age* of July 12, page 71.

The NEW YORK, NEW HAVEN & HARTFORD has ordered 1,000 50-ton box cars from The Pullman-Standard Car Manufacturing Company for delivery in early 1948.

Supply Trade

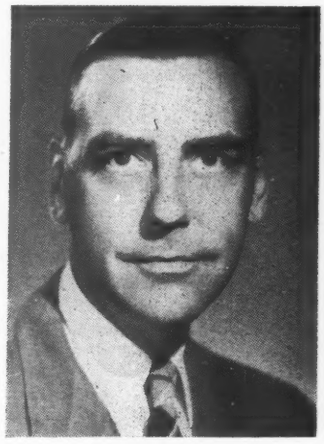
Lloyd H. Mulbarger has been appointed sales engineer for the **American Car & Foundry Co.**, with headquarters in New York. Mr. Mulbarger began his career in transportation in 1926 as an apprentice with the New York, Chicago

Lloyd H. Mulbarger

& St. Louis, at Lima, Ohio. In 1929 he was transferred to Cleveland, Ohio, as a car draftsman in the engineering department. Two years later he was transferred to the advisory mechanical committee of the Chesapeake & Ohio, the Erie, the Nickel Plate, and the Pere Marquette, on which committee he served as leading draftsman, assistant chief draftsman and later chief draftsman.

The company also has announced the appointment of **Frederick H. Eaton,** formerly assistant to the vice-president in the New York sales office, as assistant vice-president of the **American Car & Foundry Export Company.**

Charles E. Nelson, Jr., director of purchases and production planning for the **Waukesha Motor Company,** also has been appointed assistant to the president, a newly created position. Mr. Nelson



Charles E. Nelson, Jr.

joined the Waukesha Motor organization in 1929, where he first worked in the financial department. He was subsequently appointed secretary and treasurer of the Faegol Truck & Motor Coach Co. of Oakland, Calif., which, in 1933, became a subsidiary of the Waukesha Motor Company. Returning to the parent company in 1934, Mr. Nelson was appointed factory production manager and in June, 1936, director of purchases and production planning.

E. B. Dodds has been appointed head of the roofing and siding division of the **Permanente Products Company,** with headquarters in Oakland, Calif. Mr. Dodds has been associated with Permanente Products for five years and in his new capacity will supervise distribution of aluminum

E. B. Dodds

roofing and siding to jobbers located in key points such as San Francisco, Calif., Los Angeles, Seattle, Wash., Portland, Ore., Salt Lake City, Utah, and Denver, Colo.

L. B. Chapman, formerly with the marine division of the **American Car & Foundry Co.,** has been appointed assistant manager of the valve division, with headquarters in the New York sales office. **H. P. Ackerman,** formerly assistant manager of sales promotion in the eastern states, has been appointed general sales representative of the valve division.

E. B. Brant has been appointed district sales manager of the Page steel and wire division of the **American Chain & Cable Co.,** to succeed **Fred H. Jones,** who has retired because of ill health. Mr. Brant, who has been with the Page steel and wire division in Detroit, Mich., will make his new headquarters at the Pittsburgh, Pa., office.

Mason E. Kline, who recently resigned as vice-president and general sales manager of the Union Lumber Company, has announced the formation of **M. E. Kline & Co.,** with offices at 625 Market Street, San Francisco, Calif. This company will make wholesale distribution of railroad and industrial forest products, particularly lumber, timbers, ties, poles and piling.

James B. Porteus has been elected to the board and named president of the **Sterling Engine Company** of Buffalo, N. Y., to succeed **Addison F. Vars,** re-

James B. Porteus

signed. Mr. Vars, who was elected chairman of the board of directors, will be on leave of absence until November 1, when he will assume his new duties.

W. F. Munnikhuysen, vice-president of **Koppers Company, Inc.,** and general manager of the company's Wood Preserving Division, has announced that the company is ready to build "made-to-measure" highway trestle bridges of pressure-treated timber in six of its wood preserving plants. The announcement says that "factory-tailored" spans can be shipped to the site, piles driven, and the bridge assembled in record time. A booklet describing the new bridges is available.

OBITUARY

P. P. Barthelemy, consultant and service engineer of the Miller Waste Mills, Inc., Winona, Minn., and the Nash-Finch Company, Minneapolis, Minn., since his retirement in January, 1946, as master car builder of the Great Northern, at St. Paul, Minn., died in that city on July 28. Mr. Barthelemy was born in Benton county, Minn., received his higher education at the University of Minnesota, and entered railroad service as a mechanic in the shops of the Great Northern at St. Cloud, Minn. He advanced successively through the positions of air brake foreman and assistant car foreman, later becoming car foreman at Spokane, Wash. From 1915 to 1917 he was employed on car valuation work, and served as assistant general car foreman at Great Falls, Mont., from 1917 to 1919, when he was promoted to general car foreman at St. Paul, which position he held until 1923. From 1923 to 1937 Mr. Barthelemy served as assistant master car builder at St. Paul. On December 1, 1937, he was advanced to master car builder, the position he held at the time of his retirement. Mr. Barthelemy was an active member of the Lubrication committee of the Mechanical division of the Association of American Railroads while he was still master car builder of the Great Northern, and also served on the Lubrication committee of the Car Department Officers Association.

Harry M. Evans, former vice-president of the Franklin Railway Supply Company, New York, died at his home in Lyons, N. Y., on August 2. He was 76 years old. Mr. Evans joined the Franklin Company in 1908 and was with the firm until his retirement on January 1, 1946.

Financial

ALEXANDER.—*Stock.*—Division 4 of the Interstate Commerce Commission has conditionally authorized this road to issue $100,000 of capital stock, consisting of 10,000 shares at the par value of $10 per share, the proceeds of which will be applied toward (1) the purchase from the Southern for $50,350 of an 18.5 mile line in North Carolina; (2) the acquisition of equipment, including a General Electric 45-ton Diesel locomotive, at $13,000, from the Reconstruction Finance Corporation; and (3) working capital and organization expenses. Finding that the issue of the stock at the par value of $1 per share, as proposed by the applicant, would not be compatible with the public interest, the commission commented that "the possibility of misleading the unwary is too great where shares representing so little investment or so little in the way of assets are authorized." In fixing the par value at $10 per share, it required the applicant, before issuing any stock, to file with the commission an appropriate attested amendment to its certificate of incorporation authorizing the changes set forth and to report the cancellation of its outstanding void stock. Commissioner Miller, dissenting, said that he would authorize issuance of the stock at the par value of $1 per share, as requested by the applicant.

CENTRAL OF GEORGIA.—*Acquisition of Leased Lines.*—Acting upon a request of the applicant, Division 4 of the Interstate Commerce Commission has dismissed a petition filed by M. P. Callaway, trustee of this road, in the Finance Docket No. 12950 proceeding, in which he sought commission authority to acquire three leased lines—the South Western, Augusta & Savannah and Chattahoochee & Gulf—which will be merged into the reorganized C. of Ga. under the provisions of its approved plan of reorganization. As noted in *Railway Age* of February 22, page 430, the trustee had contended that merger or consolidation would be "more cumbersome" than the proposed purchase arrangement.

CENTRAL OF NEW JERSEY.—*Plan of Reorganization.*—This road has advised the Interstate Commerce Commission that it is willing to accept the plan of reorganization proposed by three bondholders groups, as outlined in *Railway Age* of April 26, page 871, as a "starting point" for its reorganization. Under the proposed plan, three separate companies would be created. A Pennsylvania company would own and operate the road's Pennsylvania properties; a New Jersey company would function similarly for the properties in that state; and a third (non-operating) company would own the stocks and certain bonds of the two operating companies.

According to the applicant, which indicated that it may amend or supplement the plan in the future, no plan of reorganization can be consummated until the settlement of several issues, including the tax claims of the State of New Jersey and the status of its lease with the Lehigh & Susquehanna. The commission has authorized New Jersey, the L. & S. and the Reading, which owns approximately 57.5 per cent of the debtor's capital stock, to intervene in the reorganization proceeding. The bondholders' plan makes no provision for the participation of the Reading or other existing stockholders.

CENTRAL OF NEW JERSEY-CENTRAL OF PENNSYLVANIA.—*Equipment Trust Certificates.*—Division 4 of the Interstate Commerce Commission has authorized these roads to assume joint liability for $3,750,000 of Series B C. of P. tquipment trust certificates, the proceeds of which will be applied toward the acquisition of 1,250 50-ton box cars at an estimated cost of $5,012,487. The certificates will be dated July 15 and will mature in 15 annual installments of $250,000 each starting July 15, 1948. The report also approves a selling price of 99.08 with a 2⅜ per cent interest rate, the bid of Halsey, Stuart & Co. and associates, which had been accepted subject to commission approval, and on which basis the average annual cost will be approximately 2.51 per cent.

CHESAPEAKE & OHIO.—*To Distribute Nickel Plate Stock.*—The directors of this road have voted to distribute to its common stockholders as a dividend the company's entire holdings of 192,400 common shares of the New York, Chicago & St. Louis. Robert J. Bowman, president of the C. & O., pointed out this would mean a distribution of approximately one-fortieth of a Nickel Plate common share for each share of C. & O. common. No formal declaration of the dividend was made pending action on the matter by the Interstate

Commerce Commission. The vote was taken, Mr. Bowman said, after full consideration of the C. & O.'s future position in Eastern trunk line territory. It was announced also that H. B. Erminger, Jr., a member of the boards of the C. & O. and the Nickel Plate, and W. H. Wenneman, vice-president of the C. & O. and a director of the Nickel Plate, have resigned from the Nickel Plate board.

CHICAGO, ST. PAUL, MILWAUKEE & OMAHA.—*Equipment Trust Certificates.*—This road has applied to the Interstate Commerce Commission for authority to assume liability for $1,560,000 of equipment trust certificates, the proceeds of which will be applied toward the purchase of the following equipment: 400 50-ton box cars, at an estimated unit cost of $3,993, from the American Car & Foundry Co.; 5 1,000-hp. Diesel-electric switching locomotives, at $90,040 each, from Fairbanks, Morse & Co.; and 1 660-hp. Diesel-electric switching locomotives, at $70,500, from the American Locomotive Company. The certificates would be dated October 1 and sold on the basis of competitive bidding.

MISSISSIPPI CENTRAL. — *Refunding.*—Acting upon a request of the applicant, Division 4 of the Interstate Commerce Commission has dismissed this road's application wherein it sought commission approval of a purchase at par value by the Reconstruction Finance Corporation of a proposed issue of $1,250,000 of 30-year 4 per cent first mortgage bonds. As noted in *Railway Age* of January 11, page 164, the bonds were to have been applied toward the retirement of $1,437,100 of M. C. 5 per cent first mortgage bonds, due July 1, 1949, and held by the United States Lumber Company.

TENNESSEE CENTRAL.—*Bonds.*—Division 4 of the Interstate Commerce Commission has authorized this road to issue, in reimbursement of expenditures made for additions and betterments between July 1, 1942, and December 31, 1946, an additional $400,000 of its 1937 series A, 4 per cent, first-mortgage bonds, to be pledged and repledged from time to time to and including December 31, 1949, as collateral security for short term notes. Like the $5,816,000 of the same series now pledged as collateral for loans from the Reconstruction Finance Corporation, the new bonds will be dated April 1, 1937, and mature on April 1, 1967. The issue is redeemable as a whole, or in part by lot, at the option of the applicant on any interest date prior to maturity. The redemption price, set up on the basis of April 1, 1937, date of the issue, was 105 for the first five years thereafter, 104 for the second five years; and it will continue to decrease by 1 per cent at the end of each succeeding five-year period until it reaches par for the period from April 1, 1962, to maturity.

Average Prices Stocks and Bonds

	Aug. 5	Last week	Last year
Average price of 20 representative railway stocks..	49.26	49.23	61.41
Average price of 20 representative railway bonds..	90.04	90.03	97.44

Dividends Declared

Alabama & Vicksburg. — $3.00, semi-annually, payable October 1 to holders of record September 8.

Chicago, South Shore & South Bend.—reduced, 25¢, payable September 16 to holders of record September 2.

Cleveland & Pittsburgh. — 4% special guaranteed, 50¢, quarterly; 7% regular guaranteed, 87½¢, quarterly, both payable September 2 to holders of record August 11.

Delaware & Hudson.—$1.00, quarterly, payable September 20 to holders of record August 28.

Fort Wayne & Jackson.—5½% preferred, $2.75, semi-annually, payable September 2 to holders of record August 20.

International of Central America. — preferred, $1.25, payable August 15 to holders of record August 4.

Maine Central.—6% prior pfd., $1.50, quarterly, payable October 1 to holders of record September 25.

Vicksburg, Shreveport & Pacific. — common, $2.50, semi-annually; 5% non-cum pfd., $2.50, semi-annually, both payable October 1 to holders of record September 8.

Construction

NORFOLK & WESTERN.—This road has awarded a contract for the foundation and floor slab work on two land warehouses at Lambert Point, Va., to the McLean Contracting Company, Baltimore, Md. A contract also has been awarded to John P. Pettyjohn & Co., Lynchburg, Va., for the superstructure work on the two warehouses, excluding the steel framework, a contract for which was placed with the Virginia Bridge Company. The warehouses will be 108-ft. wide by 1,000-ft. long and are part of a $6,000,000 improvement program (see the *Railway Age* of May 25, 1946, page 1080). Their cost will be approximately $800,000.

Railway Officers

EXECUTIVE

C. B. Whitlow, assistant to the president of the Gulf, Mobile & Ohio, has been elected president of the Gulf Transport Company (the highway subsidiary of the G. M. & O.), with headquarters as before at Jackson, Tenn.

J. C. Peterson has been appointed assistant to the president of the Minneapolis, St. Paul & Sault Ste. Marie, at Minneapolis, Minn., and will assume the duties previously undertaken by **R. E. Davies,** executive assistant, who has retired.

Colonel Hugh Kelly, of Kelly & Gruzen, architects and professional engineers, New York, and **William T. Rossell,** president of the Transit Research Corporation, New York, have been elected chairman of the board and president, respectively, of the Hudson & Manhattan, effective July 29. The new officers, both of whom have served the H. & M. as directors, succeed **William J. McInery** and **Henry E. Pealy,** who had served as temporary chairman of the board and temporary executive vice-president, respectively, since January this year, when **Robert A. W. Carlton** retired as chairman of the board and president.

FINANCIAL, LEGAL AND ACCOUNTING

Donald R. Creighton, assistant general attorney of the Delaware, Lackawanna & Western, with headquarters at New York, has been promoted to general attorney.

Joseph H. Wright, general attorney of the Illinois Central, at Chicago, has been appointed to the newly created position of assistant general solicitor, with the same headquarters. Messrs. **H. J. Deany, W. B. Gubbins,** and **A. G. Carter** have been appointed to the rank of general attorney, at Chicago.

M. I. LaBelle, auditor of disbursements of the Minneapolis, St. Paul & Sault Ste. Marie, at Minneapolis, Minn., has been appointed assistant comptroller, with the same headquarters. **A. T. Haugen,** assistant auditor of disbursements, has been appointed auditor of disbursements, with headquarters as before at Minneapolis. **J. D. Bond** has been appointed assistant to the comptroller, at Minneapolis. **R. M. Olson** has been appointed assistant auditor of disbursements, at Minneapolis. These officers have also been appointed to similar positions on the Duluth, South Shore & Atlantic, which, like the Soo Line, is controlled by the Canadian Pacific.

James B. McDonough, Jr., a member of the law firm of Cravath, Swaine & Moore of New York, has been appointed assistant general counsel of the Seaboard Air Line, with headquarters at Norfolk, Va. **W. R. C. Cocke,** general counsel, is withdrawing from that connection so that he may devote more time to the general practice of law with the firm of Williams, Cocke & Tunstall at Norfolk. Mr. Cocke will continue to be affiliated with the Seaboard, however, in the capacity of special counsel. **L. B. Plummer,** assistant general counsel for the company at Norfolk, will remain in that position, specializing in legal matters pertaining to the corporate affairs of the road, the volume of this type of work having increased greatly with the return of the Seaboard properties to corporate management. **Charles T. Abeles,** senior general attorney at Norfolk, has been appointed commerce counsel.

Clarence F. Miller, express accountant of the New York, New Haven & Hartford, has been appointed general auditor and secretary of the Express Contract Accounting Committee of the Railway Express Agency, succeeding **Charles H. Waterman,** who has retired after approximately 42 years of transportation service, over 36 of which have been in railway express. Mr. Miller has been in railway accounting work since March, 1923, his first service being with the Pullman Company and then with the Association of Railway Executives. In February, 1942, he became traveling cost accountant for the Express Contract Accounting Committee and in May, 1946, was appointed auditor in charge of

the Chicago office. He became express accountant of the New Haven in August, 1946.

Mr. Waterman was born at Lyons, N. Y., and in September, 1905, entered the accounting department of Wells Fargo & Co., becoming cost accountant in charge of electrification costs on the Chicago, Milwaukee & St. Paul (now C. M. St. P. & P.) in April, 1916; chief cost accountant for the U. S. Railroad Administration in October, 1918; assistant general auditor of the Express Contract Accounting Committee of the American Railway Express in March, 1921; and has been general auditor and secretary of the committee since May, 1930.

OPERATING

A. N. Jewell, assistant general manager of the Reading at Reading, Pa., has been appointed general superintendent, with the same headquarters. The position of assistant general manager has been abolished. A photograph of Mr. Jewell and a sketch of his career were published in the *Railway Age* of March 8, page 522.

S. F. McGhee, assistant superintendent of the Virginia division of the Seaboard Air Line at Richmond, Va., has been transferred to the North Florida division, with headquarters at Wildwood, Fla. **S. F. Osteen,** trainmaster at Hamlet, N. C., has been promoted to assistant superintendent of the Virginia division, succeeding Mr. McGhee.

L. W. Fisher, whose promotion to superintendent of the Ohio Central division of the New York Central, at Columbus, Ohio, was reported in the *Railway Age* of April 19, was born at Calumet, Mich., on April 29, 1893, and entered railroad service in 1920 as a yardman on the Michigan Central (part of the New York Central System). He was appointed yardmaster at Kalamazoo, Mich., in 1924, and

L. W. Fisher

general yardmaster in 1925. In 1929 Mr. Fisher was appointed trainmaster of the N. Y. C., at Jackson, Mich., and in 1941 he was named assistant superintendent at Bay City, Mich. From 1943 to 1946 he served as trainmaster at Detroit, Mich., whence in the latter year he was advanced to assistant superintendent at Charleston, W. Va., the position he held at the time of his recent promotion.

J. N. Landreth, superintendent of the Atchison, Topeka & Santa Fe, at Emporia, Kan., has been transferred to the Plains division, with headquarters at Amarillo, Tex., succeeding **J. B. Briscoe,** who has retired after 40 years of service. **H. O. Wagner,** superintendent at Arkansas City, Kan., has been transferred to the Slaton division, with headquarters at Slaton, Tex., succeeding **W. H. Jones,** who has been transferred to the New Mexico division, with headquarters at Las Vegas, N. M., where he replaces **D. M. Rankin,** who has been granted a leave of absence on account of ill health. **H. C. Willis,** superintendent of the Southern Kansas division at Chanute, Kan., has been transferred to the Oklahoma division, with headquarters at Arkansas City, Kan., succeeding Mr. Wagner. **L. W. Powell** has been appointed acting superintendent at Chanute, succeeding Mr. Willis.

ENGINEERING & SIGNALING

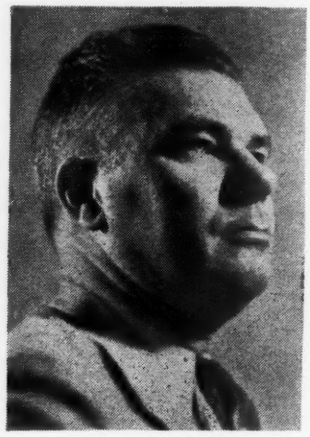
F. N. Beighley, roadmaster of the St. Louis-San Francisco, at Kansas City, Mo., has been appointed division engineer, Northern division, with headquarters at Fort Scott, Kan.

B. E. Daniels, assistant division engineer of the Chicago, Milwaukee, St. Paul & Pacific, at Terre Haute, Ind., has been promoted to division engineer, with the same headquarters, succeeding **M. L. Bardill,** who has been transferred to the Dubuque and Illinois division, with headquarters at Savanna, Ill., where he replaces **R. D. Claborn,** whose appointment as chairman of the president's committee, at Chicago, is reported elsewhere in these columns.

M. Block, assistant to the engineer of bridges of the Illinois Central, at Chicago, has been promoted to engineer of bridges, with the same headquarters, succeeding **C. C. Westfall,** whose death at Chicago on July 23 was reported in the *Railway Age* of August 2.

J. E. Yewell, engineer bridges and buildings of the Bessemer & Lake Erie at Greenville, Pa., has been appointed assistant to chief engineer, with the same headquarters. **J. W. Hopkins,** principal assistant engineer, has been appointed engineer bridges and buildings, with headquarters as before at Greenville. **Lawrence Spalding,** valuation engineer, has been appointed principal assistant engineer at Greenville and will continue to have charge of valuation work. The position of valuation engineer has been discontinued.

L. A. Gillett, assistant chief engineer of the Virginian, has been promoted to chief engineer, with headquarters as before at Norfolk, Va., succeeding **A. M. Traugott,** who has retired after 44 years of service. **H. G. Adams,** valuation engineer at Norfolk, has been appointed assistant chief engineer, succeeding Mr. Gillette. The position of valuation engineer has been abolished. **J. D. Hudson,** assistant engineer, has been appointed assistant to chief engineer. Mr. Gillette was born on March 1, 1897, at Newburyport, Mass., and was graduated from the Massachusetts Institute of Technology in 1918. After a short period of service in the U. S. Army in 1918, he began his career as a rodman for the Virginian in December, 1918. From July, 1919, to July, 1923, he served consecutively with the highway department of the state of Illinois; the Aberthan



L. A. Gillett

Construction Company, Boston, Mass.; the Department of Public Health of the Commonwealth of Massachusetts, and Weston & Sampson Consulting Engineers at Boston. He then joined the Florida East Coast as structural engineer at St. Augustine, Fla., leaving to serve in the same capacity for the Cincinnati Union Terminal in February, 1928. Mr. Gillette was appointed director of the federal works program in the Southwestern district of Ohio, with headquarters at Cincinnati, in 1934. He became regional director of the Federal Works Agency in 1942, with jurisdiction over six states, Midwestern region, with headquarters at Chicago. He was transferred to New York, with jurisdiction over nine Northeastern states, in 1944. He was named assistant chief engineer of the Virginian at Norfolk in February, 1946.

MECHANICAL

J. Homer Stallings, general foreman of the Southern system's shops at Alexandria, Va., has been promoted to master mechanic at Charleston, S. C., succeeding **R. Frank Harrill,** who has retired after more than 38 years of service.

L. R. Christy, superintendent of the car department of the Missouri Pacific, at St. Louis, Mo., has been appointed chief mechanical officer, with the same headquarters, succeeding **O. A. Garber,** who has retired after 56 years of railroad service. **O. H. Clark,** assistant superintendent of the car department, at St. Louis, has been appointed superintendent of the car department, with the same headquarters, succeeding Mr. Christy. **H. S. Marsh,** general car inspector, at St. Louis, has been appointed assistant superintendent of the car department, with the same headquarters, succeeding Mr. Clark.

W. H. Chapman, whose promotion to chief electrical engineer of the Chicago & North Western, at Chicago, was reported in the *Railway Age* of July 5, was born at Leyland, England, on August 26, 1886,

and received his higher education at the Salford Royal Technical School, Salford, England. He held a number of positions in England after graduating, and in 1910 came to the United States and accepted a position with the Commonwealth Edison Company, Chicago, later going with the Chicago Bell Telephone Company. Mr.

W. H. Chapman

Chapman entered railway service in 1911 as an electrician of the North Western at Chicago, and three years later he was promoted to chief electrician, with headquarters at Clinton, Iowa. In 1916 he was advanced to electrical inspector, with headquarters at Chicago, and in 1927 he was promoted to assistant electrical engineer. In January, 1945, he was advanced to electrical engineer, the position he held at the time of his recent promotion.

TRAFFIC

A. R. Harkleroad has been appointed assistant to the general freight agent, sales and service, of the Louisville & Nashville, with headquarters at Louisville, Ky.

L. J. Perry has been appointed assistant general freight and passenger agent of the Chicago, St. Paul, Minneapolis & Omaha (part of the North Western system), with headquarters at Duluth, Minn.

T. G. Seese, assistant manager of mail, baggage and expresss service of the Gulf, Mobile & Ohio, at Chicago, has been appointed manager of mail, baggage and express service, with the same headquarters, succeeding **W. J. Alexander,** who has retired.

H. H. Scegraves, assistant general agent of the Chicago & Eastern Illinois, at Memphis, Tenn., has been appointed general agent, with headquarters at Dallas, Tex., succeeding **N. C. Calvert,** who has retired after 26 years of service with the road.

The Chicago Great Western has announced the following traffic department changes: **W. W. Rice,** traffic agent at New York, has been appointed general agent at Buffalo, N. Y., a newly created position. **T. J. Norman,** traffic agent at St. Paul, Minn., has been appointed general agent, with the same headquarters, replacing **P. E. Johnson,** who becomes traffic agent at New York, to replace Mr. Rice. **G. E. Soderholm,** general agent at Chicago, has been transferred to Spokane, Wash., where he succeeds **J. S. Coward,** deceased. **H. F. Biallas,** general agent at Milwaukee, Wis., succeeds Mr. Soderholm as general agent at Chicago. **E. O. Tweet,** traffic agent at Milwaukee, has been appointed general agent, with the same headquarters, succeeding Mr. Biallas.

T. F. McGurn, commercial agent of the Southern, at Chicago, has been appointed general agent, in charge of the newly esttablished freight traffic office at Milwaukee, Wis.

L. C. Goering has been appointed coal traffic manager of the Louisville & Nashville, with headquarters at Louisville, Ky.

F. A. Powelson, division passenger agent of the Chesapeake & Ohio at Columbus, Ohio, has retired. **W. I. Knox** has been appointed to succeed him.

The Toledo, Peoria & Western has announced the opening of new traffic offices at Chicago, Los Angeles, Cal., and Memphis, Tenn. **E. H. Gaiennie** has been appointed traffic manager, at Chicago. He was formerly general agent, passenger department, of the St. Louis-San Francisco, at Chicago. **J. J. Kerr** has been named assistant general freight agent, at Chicago.

C. V. Gallagher, whose retirement as assistant freight traffic manager of the Minneapolis, St. Paul & Sault Ste. Marie, at Chicago, was reported in the *Railway Age* of August 2, entered railroad service as chief rate clerk in the traffic department of the Union Pacific, at Omaha, Neb., and later became chief clerk of the traffic department at the same point. In 1906 he was appointed contracting freight agent of the Soo Line, at Chicago; in 1912 he was named general agent; and in 1914 he became assistant general freight agent. From 1917 to 1921 he served as assistant general traffic manager of the Food Administration Grain Corporation, the United States Grain Corporation, and the Belgian Relief Commission at Chicago, under Herbert Hoover, food administrator, and Julius H. Barnes, United States wheat director. In 1921 Mr. Gallagher returned to the Soo Line as assistant general freight agent, at Chicago, and in September, 1929, he was advanced to assistant freight traffic manager, the position he held at the time of his retirement.

SPECIAL

Bill Burk, system photographer of the Atchison, Topeka & Santa Fe, at Los Angeles, Cal., has been appointed special representative, with headquarters at Chicago, succeeding **Ralph W. Ater,** who has been transferred to Amarillo, Tex., to replace **L. J. Cassell,** who in turn has been transferred to Galveston, Tex., where he succeeds **John Fitzhugh,** who has retired.

The following changes in the personnel of the president's committee of the Chicago, Milwaukee, St. Paul & Pacific have been announced: **R. D. Claborn,** division engineer, at Savanna, Ill., becomes chairman, effective August 15, replacing **C. E. Crippen,** whose appointment as superintendent of the Twin City terminals, at Minneapolis, Minn., was reported in the *Railway Age* of August 2. **L. G. Cronin,** storekeeper, at Galewood, Ill., became a member of the committee, effective August 1, succeeding **F. Wood,** whose appointment as general storekeeper, at Milwaukee, Wis., was reported in the *Railway Age* of August 2. **G. A. Kellow,** assistant engineer, at Chicago, became a member of the committee, effective August 1, replacing **L. B. Horton,** whose appointment as general development agent of the road's agricultural and mineral development department, at Chicago, was reported in the *Railway Age* of July 26.

H. L. Porterfield, Jr., who has for the last several months been acting as director of publicity for the Chesapeake & Ohio, has been named assistant director of public relations, with headquarters at Cleveland, Ohio. He will serve on the staff of **Thomas J. Deegan, Jr.,** director of public relations, whose headquarters are at New York. Before joining the Chesapeake & Ohio, Mr. Porterfield was in the Army Air Forces and prior to the war was an architect in business in Texas. Mr. Porterfield is 32 years old.

PURCHASES AND STORES

I. V. Cohen, assistant purchasing agent of the Toledo, Peoria & Western, has been appointed purchasing agent, with headquarters as before, at Peoria, Ill.

T. O. Dent, storekeeper of the Missouri Pacific, at Wichita, Kan., has been appointed district storekeeper, at De Soto, Mo., succeeding **J. E. Bogan,** who has retired. **W. G. Rathert** has been appointed assistant purchasing agent of the Missouri Pacific, with headquarters at St. Louis, Mo.

OBITUARY

Allen B. Kast, assistant to general purchasing agent of the Louisville & Nashville, with headquarters at Louisville, Ky., died of a heart attack on June 21.

Charles F. Propst, who retired in 1942 as president of the now abandoned Chicago, Attica & Southern, with headquarters at Attica, Ind., died at Paris, Ill., on July 31.

Fred Taylor Dickerson, who retired in 1938 as secretary and treasurer of the Central of New Jersey and subsidiaries at New York, died on August 3 at Muhlenberg hospital, Plainfield, N. J., following an operation. Born at Ramapo, N. Y., on January 28, 1867, Mr. Dickerson entered railroad service in 1884 as an assistant agent and telegraph operator with the Jersey Central. He held various positions with that road before becoming secretary and treasurer in 1920, from which position he retired in October, 1938. Mr. Dickerson was a former president of the New York Railroad Club and at the time of his death was a member of its executive committee.

Table of Revenues and Expenses starts on the next left-hand page.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1947

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax-accruals	Net railway operating income 1947	Net railway operating income 1946
Akron, Canton & Youngstown	June	171	$394,666	$107	$418,496	$73,686	$47,840	$25,098	$134,900	$302,555	72.3	$115,941	$46,515	$54,282	—$17,170
	6 mos.	171	2,485,162	489	2,611,121	415,095	253,734	145,611	794,041	1,732,083	66.3	879,038	349,983	434,140	64,406
Alton	June					Included in Gulf, Mobile & Ohio									
	6 mos.					Included in Gulf, Mobile & Ohio									
Atchison, Topeka & Santa Fe System	June	13,107	28,406,749	4,574,957	36,060,280	5,325,607	7,125,307	781,930	12,878,924	27,660,338	76.7	8,399,942	4,446,205	3,375,590	3,082,123
	6 mos.	13,107	164,696,063	24,151,455	207,351,677	30,904,201	40,206,903	4,708,041	72,920,279	157,908,672	76.2	49,443,005	28,209,867	22,019,328	20,757,858
Atlanta & St. Andrews Bay	June	82	135,629	2,006	142,039	17,392	13,190	6,585	41,254	88,808	62.5	53,231	25,189	19,622	10,977
	6 mos.	82	909,552	7,320	947,229	107,862	91,856	38,020	255,867	554,769	58.6	392,460	177,459	159,273	54,877
Atlanta & West Point	June	93	234,265	54,812	323,270	25,978	50,620	12,415	160,927	269,048	83.2	54,222	20,183	12,932	21,776
	6 mos.	93	1,466,392	274,406	1,975,762	284,223	295,559	77,737	985,630	1,767,734	89.5	208,028	123,751	—48,063	33,838
Western of Alabama	June	133	236,585	53,128	319,095	30,886	54,512	11,846	133,950	247,814	77.7	71,280	41,679	28,983	31,242
	6 mos.	133	1,449,656	298,828	1,946,081	231,593	341,101	73,984	848,946	1,604,467	82.4	341,613	215,228	118,230	155,837
Atlantic Coast Line	June	5,573	7,951,690	1,927,081	10,537,319	2,283,009	1,936,678	262,956	4,500,016	9,426,683	89.5	1,110,636	800,000	29,273	—572,345
	6 mos.	5,573	50,704,719	12,129,740	68,164,100	13,796,290	11,364,849	1,567,013	27,944,074	57,658,252	84.6	10,505,848	5,700,000	3,008,846	—939,276
Charleston & Western Carolina	June	343	342,535	1,559	354,421	72,259	76,862	12,439	147,373	319,544	90.2	34,877	25,000	3,157	—748
	6 mos.	343	2,200,222	17,229	2,280,083	408,789	414,336	76,526	882,310	1,837,136	80.6	442,947	180,000	219,081	—138,233
Baltimore & Ohio	June	6,196	25,971,069	2,262,575	30,168,693	4,022,943	6,422,240	646,728	12,383,485	24,779,513	82.1	5,389,180	2,377,794	2,561,156	980,611
	6 mos.	6,194	152,254,367	11,627,072	174,326,323	21,033,546	37,416,641	3,942,050	73,632,350	143,487,697	82.3	30,838,626	13,205,454	15,613,229	—5,515,899
Staten Island Rapid Transit	June	29	138,424	115,098	266,559	44,298	24,893	1,320	144,855	238,916	89.6	27,643	41,384	—30,223	—58,156
	6 mos.	29	898,858	623,273	1,590,463	270,537	205,336	9,728	897,260	1,524,520	95.9	65,943	246,854	—283,315	—299,618
Bangor & Aroostook	June	602	486,472	52,047	563,215	229,518	168,860	7,260	143,822	584,639	103.8	—21,424	31,150	—31,289	—64,703
	6 mos.	602	6,525,545	285,262	6,987,059	1,343,893	1,086,627	45,238	2,031,615	4,745,760	67.9	2,241,299	983,157	1,159,164	638,993
Bessemer & Lake Erie	June	214	2,544,790	1,732	2,561,766	164,668	444,755	16,652	462,245	1,133,935	44.3	1,427,831	674,979	974,092	710,019
	6 mos.	214	9,747,146	9,343	9,846,327	771,313	2,650,084	101,759	2,284,276	6,092,940	61.9	3,753,387	2,255,992	3,218,710	364,508
Boston & Maine	June	1,762	4,685,450	1,415,783	6,754,444	1,148,023	1,048,118	105,784	2,730,084	5,303,127	78.5	1,451,317	722,210	443,811	—28,570
	6 mos.	1,762	29,955,304	7,174,998	40,985,720	6,610,863	6,387,916	607,640	16,854,892	32,176,018	78.5	8,809,702	4,135,096	2,985,929	439,206
Burlington-Rock Island	June	228	234,984	59,553	314,307	44,607	32,594	4,210	139,712	237,520	75.6	76,787	10,734	22,549	24,358
	6 mos.	228	1,379,838	300,007	1,821,085	233,186	254,787	24,574	878,119	1,493,463	82.0	327,622	63,501	—48,932	125,806
Cambria & Indiana	June	35	125,432	.....	125,493	19,487	90,054	663	20,374	137,730	109.8	—12,237	39,856	39,224	68,174
	6 mos.	35	812,238	.....	812,634	85,030	549,332	3,967	129,396	813,480	100.10	—846	327,501	223,408	256,730
Canadian Pacific Lines in Maine	June	234	297,861	35,292	359,577	87,457	82,019	7,192	131,746	321,067	89.3	38,510	26,393	—42,973	—129,199
	6 mos.	234	2,857,000	205,375	3,197,955	445,990	457,240	40,734	1,252,003	2,266,595	70.9	931,360	155,753	286,645	87,759
Canadian Pacific Lines in Vermont	June	90	163,927	15,147	195,812	60,136	27,064	4,969	121,941	220,099	112.4	—24,287	18,500	—86,068	—115,975
	6 mos.	90	854,457	95,881	1,062,762	253,318	178,467	27,813	834,577	1,330,686	125.2	—267,924	98,476	—625,655	—769,929
Central of Georgia	June	1,816	2,061,333	214,292	2,483,360	476,566	470,673	97,920	1,274,173	2,466,480	99.3	16,880	241,485	—210,810	8,362
	6 mos.	1,816	13,064,682	1,418,173	16,031,542	2,815,350	2,813,462	587,778	7,827,986	14,948,026	93.2	1,083,516	1,473,608	—350,449	—155,097
Central of New Jersey	June	419	2,409,069	515,353	3,186,401	434,473	547,682	49,259	1,557,485	2,744,612	86.1	441,789	391,939	—205,433	—224,834
	6 mos.	419	13,955,135	2,665,656	18,144,489	2,399,342	3,220,338	298,022	9,411,194	16,283,850	89.7	1,860,639	2,243,433	—1,999,388	—1,495,375
Central of Pennsylvania	June	213	1,426,346	18,360	1,481,717	134,856	269,359	21,570	467,374	929,853	62.8	551,864	64,457	677,338	50,393
	6 mos.	213	8,556,063	112,834	8,872,122	770,854	1,684,624	129,104	2,889,857	5,699,236	64.2	3,172,886	392,588	3,874,962	292,871
Central of Vermont	June	422	712,000	77,000	848,942	138,016	139,194	12,251	321,985	643,769	75.8	205,173	52,778	110,057	283
	6 mos.	422	3,935,000	423,000	4,733,457	772,999	839,356	71,446	2,038,780	3,921,122	82.8	812,335	316,190	191,511	—534,908
Chesapeake & Ohio	June	5,056	23,825,879	1,135,982	26,374,212	3,436,278	4,418,082	618,055	9,019,167	18,590,306	70.5	7,783,906	3,753,082	4,070,408	3,692,655
	6 mos.	5,056	140,075,075	5,564,631	152,176,160	20,327,889	26,407,944	3,380,881	52,282,340	108,331,427	71.2	43,844,733	22,011,959	23,789,731	11,843,084
Chicago & Eastern Illinois	June	910	1,699,568	333,402	2,275,225	353,027	407,791	79,022	959,010	1,923,283	84.5	351,942	181,100	56,861	—55,374
	6 mos.	910	10,487,281	1,835,361	13,749,410	1,904,711	2,602,733	459,819	6,146,894	11,829,039	86.0	1,920,371	961,100	289,873	—1,402,759
Chicago & Illinois Midland	June	131	544,138	977	578,801	95,775	110,710	22,215	159,773	418,465	72.3	160,336	75,927	79,537	105,429
	6 mos.	131	3,651,080	5,569	3,859,259	524,011	712,062	140,709	1,045,248	2,600,465	67.4	1,258,794	558,879	673,415	215,560
Chicago & North Western	June	8,064	10,398,467	2,493,262	14,413,407	2,375,251	2,796,733	274,036	5,986,136	12,088,747	83.9	2,324,660	1,136,307	945,843	753,395
	6 mos.	8,064	62,501,436	11,287,792	83,029,922	12,835,260	16,282,099	1,632,662	36,817,242	71,341,885	85.9	11,688,037	6,554,292	3,408,407	—78,532
Chicago, Burlington & Quincy	June	8,867	11,375,963	1,374,500	14,249,930	3,673,121	2,154,742	371,228	5,960,202	12,745,798	89.4	1,504,132	1,041,378	207,978	1,347,216
	6 mos.	8,868	84,244,292	8,230,094	101,731,293	14,461,926	13,616,137	2,175,741	35,250,594	68,949,234	67.8	32,782,059	15,490,429	15,085,830	12,959,545
Chicago Great Western	June	1,500	1,915,993	79,703	2,169,969	575,235	356,552	78,785	1,065,372	2,163,320	99.7	6,649	150,155	—331,007	—160,751
	6 mos.	1,500	12,946,731	487,573	14,593,730	2,157,838	2,061,437	463,851	6,674,925	11,851,577	81.2	2,742,153	900,299	734,148	—807,994
Chicago, Indianapolis & Louisville	June	541	1,036,848	64,663	1,183,237	272,626	208,806	58,072	513,611	1,124,685	95.1	58,552	82,316	—123,947	—117,722
	6 mos.	541	6,466,285	365,582	7,300,170	1,581,548	1,049,869	326,848	3,054,152	6,423,253	88.0	876,917	464,975	—260,752	—482,830

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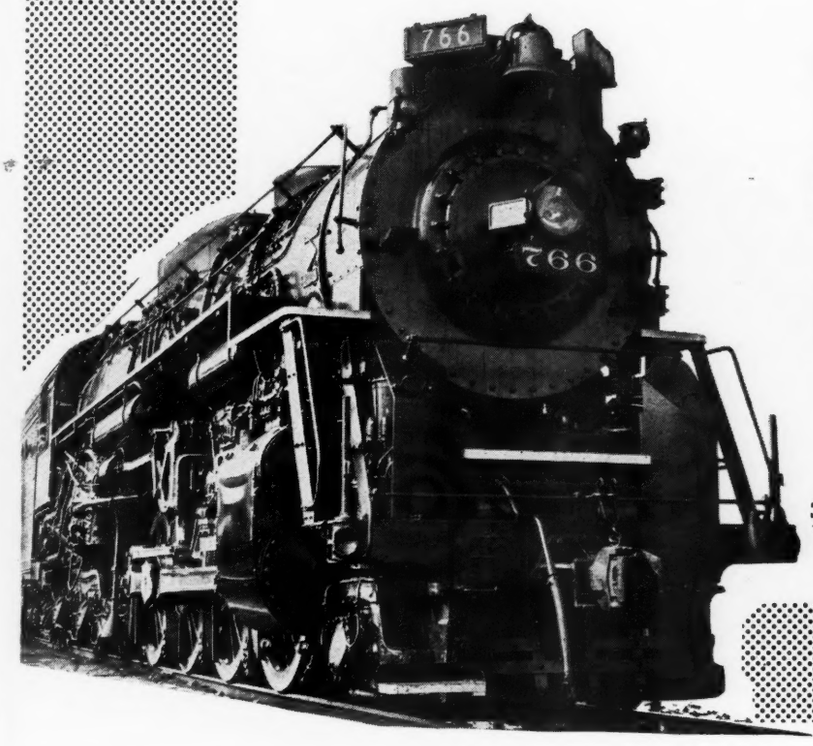
HIGH AVAILABILITY

MEANS INCREASED REVENUE



THE modern steam locomotive is capable of hauling heavier payloads at higher sustained speeds. Terminal-to-terminal time can be drastically reduced. Reduced running time means increased availability . . . an increase that such progressive railroads as the Nickel Plate are capitalizing on in the operation of its freight fleet of 55 Lima-built 2-8-4's at speeds closely approximating passenger schedules.

LIMA LOCOMOTIVE WORKS

LIMA LOCOMOTIVE WORKS INCORPORATED

INCORPORATED LIMA, OHIO

REVENUES AND EXPENSES OF RAILWAYS

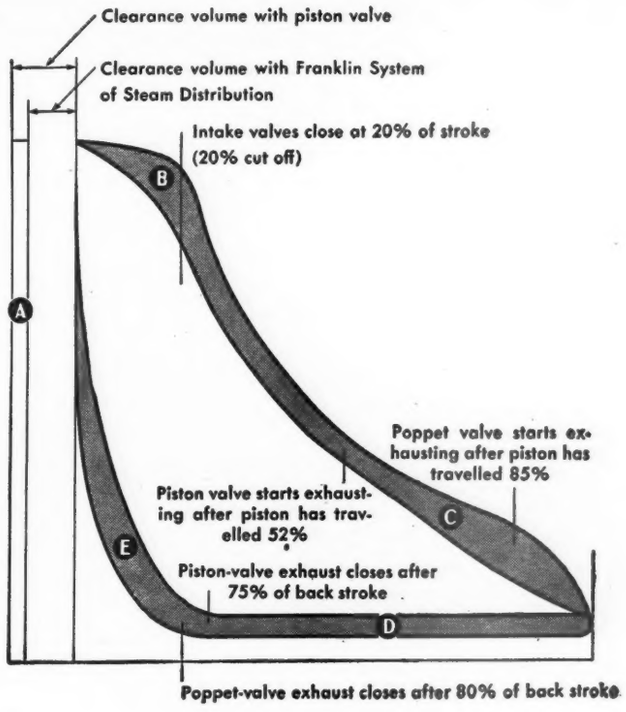
MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1947—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income 1947	Net railway operating income 1946
Chicago, Milwaukee, St. Paul & Pacific	June	10,733	$13,960,137	$1,976,076	$17,812,967	$4,194,274	$2,974,616	$394,294	$7,289,903	$15,657,749	87.9	$2,155,218	$1,269,000	$476,578	—$740,419
	6 mos.	10,733	87,767,171	9,748,918	107,976,318	17,807,998	17,248,966	2,206,329	45,135,820	87,092,868	80.7	20,883,450	10,008,000	7,803,287	2,367,222
Chicago, Rock Island & Pacific	June	7,650	10,862,897	1,974,738	13,954,477	2,256,461	2,213,875	399,286	5,723,037	11,268,274	80.8	2,686,203	853,120	1,104,258	1,390,621
	6 mos.	7,650	66,190,597	10,897,564	83,540,770	10,167,221	13,984,952	2,375,876	32,494,174	63,054,312	75.5	20,486,458	7,376,836	9,152,077	6,663,501
Chicago, St. Paul, Minn. & Omaha	June	1,616	1,836,352	230,025	2,287,368	394,865	426,976	50,351	1,093,328	2,065,281	90.3	222,087	188,034	—58,953	—82,896
	6 mos.	1,616	12,182,062	1,169,601	14,678,886	2,124,632	2,486,877	304,003	7,012,181	12,519,790	85.3	2,159,096	1,136,304	389,328	—1,538,347
Clinchfield	June	317	1,405,427	7,797	1,428,019	113,467	246,691	28,359	377,322	790,882	55.4	637,137	145,001	582,239	314,150
	6 mos.	305	8,834,921	37,799	8,950,346	624,123	1,385,439	169,534	2,327,559	4,655,939	52.0	4,294,407	871,113	3,833,424	1,677,434
Colorado & Southern	June	748	692,835	94,006	878,590	209,402	218,083	20,765	376,337	875,243	99.6	3,347	53,086	—57,015	85,625
	6 mos.	748	4,441,692	536,032	5,522,631	968,020	1,098,815	128,934	2,417,721	4,888,779	88.5	633,852	511,723	4,961	13,994
Ft. Worth & Denver City	June	902	1,032,769	166,248	1,286,728	152,519	183,407	36,706	540,154	974,682	75.7	312,046	91,250	113,110	204,107
	6 mos.	902	4,657,445	826,457	6,019,584	855,931	977,034	197,472	2,371,426	4,777,512	79.4	1,242,072	446,055	545,059	162,148
Colorado & Wyoming	June	42	99,619	.....	162,051	14,704	15,382	1,098	57,884	95,904	59.1	66,147	35,641	30,859	49,675
	6 mos.	42	551,473	.....	948,349	58,316	92,590	5,619	368,122	559,864	59.0	388,485	209,008	182,758	134,725
Columbus & Greenville	June	168	94,045	4,062	106,156	53,936	15,824	4,720	42,138	131,894	124.2	—25,738	11,580	—33,221	—3,160
	6 mos.	168	758,705	15,768	838,623	246,833	159,324	30,656	363,383	894,604	106.7	—55,981	85,555	—129,453	22,063
Delaware & Hudson	June	794	4,016,246	170,877	4,338,147	577,025	920,322	60,902	1,581,825	3,288,211	75.8	1,049,936	531,902	517,100	327,614
	6 mos.	794	24,374,225	1,002,339	26,181,245	3,075,134	5,521,982	356,938	9,947,180	19,801,228	75.6	6,380,017	3,263,415	3,073,455	1,050,661
Delaware, Lackawanna & Western	June	973	5,311,843	937,629	6,830,468	864,284	1,030,251	125,753	2,881,488	5,114,008	74.9	1,716,460	757,400	841,373	59,495
	6 mos.	973	31,054,939	4,877,008	39,366,803	4,641,718	6,342,543	791,437	17,833,609	30,866,672	78.4	8,500,131	3,914,920	4,038,342	1,489,607
Denver & Rio Grande Western	June	2,467	4,133,018	333,970	4,690,355	777,630	933,743	124,138	1,643,065	3,725,327	79.4	965,028	574,974	447,635	316,622
	6 mos.	2,470	23,772,546	1,531,182	26,492,042	3,399,361	5,616,745	758,111	9,999,280	21,091,289	79.6	5,400,753	2,657,961	3,116,920	1,322,837
Detroit & Mackinac	June	230	134,668	1,829	150,196	41,541	13,220	1,521	27,380	89,269	59.4	60,927	30,860	26,688	—259
	6 mos.	230	763,583	9,953	844,493	145,680	88,358	6,685	195,741	471,688	55.9	372,805	142,211	201,611	36,762
Detroit & Toledo Shore Line	June	50	390,310	.....	391,506	62,060	36,154	10,925	120,067	238,380	60.9	153,126	46,446	41,965	37,291
	6 mos.	50	2,935,703	.....	2,947,196	263,748	226,057	67,948	849,571	1,468,140	49.8	1,479,056	464,031	520,216	190,604
Detroit, Toledo & Ironton	June	464	920,781	1,002	977,482	136,905	149,654	19,072	254,640	593,621	60.7	383,861	156,904	206,924	79,078
	6 mos.	464	6,502,535	5,298	6,781,175	722,661	980,863	112,934	1,709,957	3,717,068	54.8	3,064,107	1,230,242	1,646,567	613,016
Duluth, Missabe & Iron Range	June	547	4,489,727	3,839	5,260,007	418,196	416,705	6,950	1,114,361	2,005,255	38.1	3,254,752	1,460,251	1,790,434	2,216,650
	6 mos.	547	11,687,993	14,996	13,627,948	2,287,021	2,374,409	40,184	3,929,657	8,923,611	65.5	4,704,337	2,472,850	2,192,834	410,498
Duluth, Winnipeg & Pacific	June	175	247,000	1,800	253,300	68,033	37,039	3,054	99,801	212,807	84.0	40,493	23,392	—9,709	—46,292
	6 mos.	175	1,718,000	8,400	1,756,100	314,276	226,041	17,995	725,425	1,317,476	75.0	438,624	153,042	88,564	—137,025
Elgin, Joliet & Eastern	June	391	2,702,424	19	3,183,716	265,916	422,329	21,455	1,187,519	1,984,117	62.3	1,199,599	479,814	474,111	44,848
	6 mos.	391	16,167,979	40	19,143,511	1,270,736	2,582,848	124,688	7,339,041	11,827,992	61.8	7,315,519	2,915,887	2,841,536	—568,341
Erie	June	2,229	10,656,724	638,040	12,264,420	1,603,896	2,113,834	266,092	5,196,563	9,750,081	79.5	2,514,339	1,097,798	884,623	—963,561
	6 mos.	2,229	65,195,282	3,287,535	73,422,437	7,880,836	13,168,604	1,570,500	32,038,009	57,981,374	79.0	15,441,063	6,768,299	5,583,358	—1,512,825
Florida East Coast	June	575	1,095,784	473,965	1,701,680	495,113	362,631	55,933	714,654	1,744,397	102.5	—42,717	95,662	—232,703	—24,863
	6 mos.	629	9,084,658	4,670,873	15,186,616	2,607,408	2,302,141	355,700	5,509,416	11,815,154	77.8	3,371,462	1,003,603	1,597,658	2,338,367
Georgia Railroad	June	328	597,107	25,431	661,488	80,305	98,276	25,993	301,713	530,795	80.2	130,693	44,015	103,034	44,900
	6 mos.	328	3,482,585	166,888	3,921,838	520,379	650,294	158,989	1,947,034	3,428,070	87.4	493,768	282,491	316,074	38,071
Georgia & Florida	June	408	200,198	3,139	209,585	55,630	28,871	11,867	90,017	195,499	93.3	14,086	16,718	—16,578	—13,636
	6 mos.	408	1,190,998	13,575	1,240,943	325,754	171,852	72,781	522,096	1,145,733	92.3	95,210	96,191	—81,647	—58,447
Grand Trunk Western	June	972	3,369,000	190,000	3,815,000	553,032	670,744	52,016	1,608,743	3,019,454	79.2	795,546	245,691	459,208	—162,611
	6 mos.	972	19,444,000	1,044,000	22,040,000	3,052,652	3,497,567	303,870	9,711,326	17,317,132	78.6	4,722,868	1,532,864	2,260,811	—1,611,219
Canadian Nat'l Lines in New England	June	172	130,000	13,000	153,000	67,063	35,320	2,619	92,343	208,700	136.4	—55,700	25,558	—104,957	—66,820
	6 mos.	172	885,000	49,400	1,002,400	316,380	207,366	15,280	643,590	1,244,790	124.2	—242,390	153,348	—564,728	—626,829
Great Northern	June	8,333	12,699,183	1,499,642	15,595,444	2,819,198	2,660,538	293,391	5,100,457	11,453,527	73.4	4,141,917	2,219,671	1,828,826	2,736,113
	6 mos.	8,333	72,832,792	6,043,679	85,648,508	15,556,615	15,997,477	1,879,470	31,350,486	68,021,722	79.4	17,626,786	10,083,618	7,103,605	4,025,564
Green Bay & Western	June	234	263,715	57	269,663	70,183	29,381	14,568	82,888	209,758	77.8	59,905	36,723	10,179	7,253
	6 mos.	234	1,511,045	—15	1,546,406	313,164	165,360	82,809	488,802	1,122,871	72.6	423,535	196,466	161,981	—14,580

Table continued on next left-hand page.

REG. U.S.

MORE POWER FROM THE BOILER


Clearance volume with piston valve
Clearance volume with Franklin System of Steam Distribution
Intake valves close at 20% of stroke (20% cut off)
A
B
C
D
E
Poppet valve starts exhausting after piston has travelled 85%
Piston valve starts exhausting after piston has travelled 52%
Piston-valve exhaust closes after 75% of back stroke
Poppet-valve exhaust closes after 80% of back stroke

A With reduced clearance volume (space between intake valves and piston at end of stroke) more economical use is made of the steam admitted to cylinders.

B With larger steam flow areas and faster valve openings, steam enters the cylinder with smaller pressure drop. This increases the amount of steam admitted for a given cut-off — increases the power output for a given cut-off, or permits the use of a shorter and more economical cut-off for a given power output.

C With late release, the expansion period is increased substantially. This increases efficiency by increasing the amount of heat transformed into mechanical work.

D With late release and large exhaust areas, the back pressure is lower, which again increases the power obtained from a given amount of steam.

E With low back pressure, and late compression, excessive pressures at the end of the back stroke are avoided. Economical short cut-offs can be used without severe reactions on the running gear.

WITH

THE FRANKLIN SYSTEM OF STEAM DISTRIBUTION

These indicator cards represent a locomotive equipped with the Franklin System of Steam Distribution and a locomotive, identical in all other respects, equipped with piston valves. Both cards are based on high-speed operation at 20% cut-off.

As can be seen, the engine equipped with poppet valves can utilize full boiler capacity because of the larger steam flow areas and the faster opening and closing of valves. It develops more horsepower per pound of steam. It uses less fuel and water to deliver a given horsepower output.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK • CHICAGO • MONTREAL

STEAM DISTRIBUTION SYSTEM • BOOSTER • RADIAL BUFFER • COMPENSATOR AND SNUBBER • POWER REVERSE GEARS
AUTOMATIC FIRE DOORS • DRIVING BOX LUBRICATORS • STEAM GRATE SHAKERS • FLEXIBLE JOINTS • CAR CONNECTION

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1947—CONTINUED

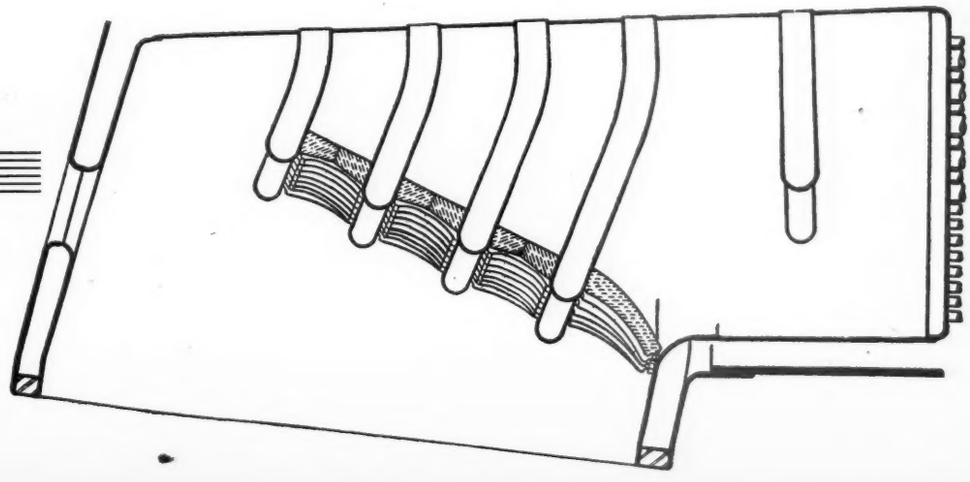
Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax-accruals	Net railway operating income 1947	1946
Gulf, Mobile & Ohio	June	2,904	$4,795,405	$599,502	$5,824,043	$1,013,451	$977,042	$189,856	$1,791,452	$4,437,514	76.2	$1,386,529	$390,338	$579,345	—$237,284
	6 mos.	2,904	29,842,614	3,162,368	35,720,497	6,008,096	5,850,366	1,139,662	11,578,898	26,600,957	74.5	9,119,540	3,156,333	3,686,779	—984,222
Illinois Central (System)	June	6,582	15,373,375	1,885,555	19,331,351	3,373,980	3,573,586	326,321	6,667,854	14,768,004	76.4	4,563,347	2,373,635	1,962,645	911,121
	6 mos.	6,582	94,635,922	12,002,008	118,519,294	18,583,175	20,959,048	2,097,810	42,053,891	88,721,234	74.9	29,798,060	15,000,293	13,029,826	7,284,354
Illinois Terminal	June	476	672,616	120,313	893,054	127,479	122,097	27,352	321,393	628,659	70.4	264,395	118,068	118,333	76,046
	6 mos.	476	4,326,042	758,580	5,638,816	729,226	745,752	158,783	2,031,166	3,863,876	68.5	1,774,940	777,230	807,430	319,002
Kansas City Southern	June	890	2,545,483	107,503	2,853,481	331,636	404,674	74,168	833,805	1,755,620	61.5	1,097,861	433,000	519,640	403,703
	6 mos.	890	15,168,298	527,072	17,038,706	1,929,310	2,203,889	433,432	5,156,510	10,378,841	60.9	6,659,865	2,357,000	3,333,042	2,401,786
Kansas, Oklahoma & Gulf	June	328	374,309	1,184	379,169	53,844	34,534	14,300	119,433	237,629	62.7	141,540	50,157	55,039	81,853
	6 mos.	328	2,472,674	7,075	2,503,271	224,873	183,879	84,327	686,203	1,268,922	50.7	1,234,349	469,119	574,738	353,323
Lake Superior & Ishpeming	June	156	376,008	78	474,391	53,612	35,436	1,555	93,127	191,654	40.4	282,737	126,559	159,605	138,277
	6 mos.	156	1,085,368	506	1,337,727	223,229	237,424	9,116	354,489	873,861	65.3	463,866	288,270	206,960	—299,365
Lehigh & Hudson River	June	96	227,419	.....	227,977	44,828	26,947	6,926	77,068	162,741	71.4	65,236	27,746	20,199	1,066
	6 mos.	96	1,577,561	.....	1,582,532	251,880	212,357	41,601	538,106	1,092,333	69.0	490,199	196,030	152,999	84,116
Lehigh & New England	June	193	620,193	.....	627,212	78,688	93,208	10,062	184,966	392,837	62.6	234,375	111,635	134,537	51,895
	6 mos.	193	3,245,369	.....	3,282,333	413,985	569,155	62,241	1,073,160	2,267,096	69.1	1,015,237	521,324	595,029	445,732
Lehigh Valley	June	1,252	5,245,713	418,921	6,061,447	792,981	874,655	127,923	2,688,777	4,721,089	77.9	1,340,358	477,804	651,902	181,825
	6 mos.	1,253	31,539,138	2,219,126	36,141,641	4,731,126	6,001,641	773,165	16,500,292	29,488,896	81.6	6,652,745	2,774,065	2,910,062	1,408,424
Louisiana & Arkansas	June	756	1,117,595	54,309	1,217,687	185,141	129,208	40,113	393,045	789,319	64.8	428,368	197,480	149,800	174,138
	6 mos.	756	7,148,578	228,289	7,684,387	1,086,318	811,667	231,337	2,377,726	4,763,167	62.0	2,921,220	1,245,988	1,161,392	924,723
Louisville & Nashville	June	4,768	12,951,318	1,374,570	15,241,903	2,168,958	3,233,664	262,368	6,322,832	12,461,196	81.8	2,780,707	1,904,864	1,395,465	923,925
	6 mos.	4,768	80,494,874	7,408,299	93,829,105	12,426,097	19,186,270	1,629,187	38,451,672	74,961,689	79.9	18,867,416	12,539,810	9,076,628	5,755,824
Maine Central	June	988	1,473,919	264,922	1,869,885	321,639	315,111	23,792	674,125	1,394,744	74.6	475,141	231,683	184,655	59,373
	6 mos.	988	9,845,924	1,070,747	11,633,094	1,856,353	1,959,684	106,963	4,513,847	8,809,060	75.7	2,824,034	1,255,095	1,106,463	524,667
Midland Valley	June	334	145,697	12	148,593	44,852	14,461	2,986	50,279	118,450	79.7	30,143	16,790	8,121	15,661
	6 mos.	334	921,642	59	938,867	189,884	92,419	17,992	298,131	635,705	67.7	303,162	130,976	133,423	42,033
Minneapolis & St. Louis	June	1,408	1,268,333	11,451	1,332,000	237,924	219,457	89,806	453,773	1,073,199	80.6	258,801	150,108	103,532	48,663
	6 mos.	1,408	8,273,196	62,145	8,654,089	1,277,748	1,336,355	527,937	2,885,181	6,475,503	74.8	2,178,586	1,167,511	906,770	—325,583
Minneapolis, St. Paul & S. S. Marie	June	3,224	2,136,386	224,014	2,542,046	554,475	395,409	58,915	1,042,408	2,149,660	84.6	392,386	216,034	165,054	295,636
	6 mos.	3,224	12,684,296	691,050	14,311,337	2,781,982	2,522,549	319,793	6,327,670	12,487,961	87.3	1,823,376	1,221,833	529,566	—712,686
Duluth, South Shore & Atlantic	June	530	383,811	13,382	426,250	96,300	69,843	14,617	159,810	349,534	82.0	76,716	27,857	45,776	—50,894
	6 mos.	530	2,329,019	67,702	2,537,143	486,056	421,275	88,221	1,048,072	2,100,066	82.8	437,077	156,095	207,496	—97,629
Spokane International	June	152	159,484	1,637	169,768	38,007	19,267	3,754	59,698	128,568	75.7	41,200	15,223	14,257	9,767
	6 mos.	152	875,086	9,921	942,407	210,479	96,206	22,253	327,699	702,195	74.5	240,212	88,112	79,790	60,284
Mississippi Central	June	148	119,144	—732	121,972	29,533	17,735	10,256	35,491	102,286	83.9	19,686	4,927	3,204	17,722
	6 mos.	148	881,176	—658	906,619	228,547	104,038	63,517	225,605	667,023	73.6	239,596	79,313	81,115	59,996
Missouri & Arkansas	June	365	2,060	—21	2,130	10,153	739	.....	—278	13,388	100.0	—11,258	1,211	—12,416	—12,392
	6 mos.	365	5,335	324	11,576	49,940	17,905	608	9,123	90,444	100.0	—78,868	6,815	—88,256	—88,906
Missouri-Illinois	June	172	323,215	364	325,348	64,962	36,476	5,657	86,628	200,045	61.5	125,303	51,366	53,764	46,138
	6 mos.	172	1,936,572	1,977	1,956,751	305,177	207,858	36,093	501,052	1,090,990	55.8	865,761	368,239	423,209	272,293
Missouri-Kansas-Texas Lines	June	3,253	4,878,542	460,480	5,762,056	942,894	820,436	197,877	2,373,404	4,582,550	79.5	1,179,506	439,610	411,997	433,492
	6 mos.	3,253	26,790,646	2,498,602	31,973,921	4,937,324	4,718,561	1,181,488	12,907,749	25,284,341	79.1	6,689,580	2,841,671	2,352,692	2,251,262
Missouri Pacific	June	7,011	12,279,126	1,343,623	14,848,232	2,568,733	2,806,642	363,165	6,109,003	12,412,497	83.6	2,435,735	734,648	890,130	901,327
	6 mos.	7,033	78,806,189	7,720,072	94,460,374	13,589,087	16,294,257	2,167,452	37,055,642	72,743,628	77.0	21,716,746	6,904,958	10,418,023	6,882,105
Gulf Coast Lines	June	1,734	2,639,651	79,657	2,858,134	635,518	405,668	68,597	1,034,573	2,256,858	79.0	601,276	146,158	233,231	240,398
	6 mos.	1,734	20,006,685	513,239	21,418,558	3,892,105	2,307,806	408,341	6,748,310	14,008,802	65.4	7,409,756	1,850,687	3,617,036	4,162,776
International-Great Northern	June	1,110	1,872,896	242,726	2,362,972	442,176	381,353	43,852	1,030,065	2,009,286	85.0	353,686	124,927	134,737	25,596
	6 mos.	1,110	11,283,860	1,291,290	14,126,107	2,631,846	2,207,081	265,450	6,354,899	12,164,616	86.1	1,961,491	765,806	249,593	87,027
Monongahela	June	170	722,035	1,377	727,537	68,781	63,431	858	185,242	322,541	44.3	404,996	67,932	225,695	100,707
	6 mos.	170	4,193,805	7,111	4,227,523	371,344	374,276	4,739	1,162,577	1,939,003	45.9	2,288,520	400,895	1,268,422	297,253

Table continued on next left-hand page.

Faster Evaporation

Located right in the path of the hot gases, Security Circulators are very effective elements for speeding evaporation. There is a continuous circulation of water from the side water-legs, through the circulators, over the top of the crown sheet.

At the same time the Security Circulators provide the most satisfactory type of support for a 100% brick arch.



Typical Installation in Coal-Fired Locomotive

AMERICAN ARCH COMPANY, INC.

NEW YORK • CHICAGO

SECURITY CIRCULATOR DIVISION

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1947—CONTINUED

		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax-accruals	Net railway operating income: 1947	1946
Montour	June	51	$253,898	.....	$255,700	$29,681	$62,918	$1,029	$77,685	$180,926	70.8	$74,774	$55,048	$63,333	$46,170
	6 mos.	51	1,606,762	....	1,618,972	120,896	380,575	6,455	559,508	1,123,189	69.4	495,783	347,565	399,694	136,181
Nashville, Chattanooga & St. Louis	June	1,052	2,130,766	$209,394	2,561,468	486,125	393,472	96,358	1,026,099	2,107,125	82.3	454,343	227,186	198,458	13,117
	6 mos.	1,052	12,671,220	1,187,078	15,355,438	2,471,823	2,583,479	582,429	6,430,200	12,714,970	82.8	2,640,468	1,552,041	1,060,984	—457,574
New York Central	June	10,746	39,309,703	11,609,476	57,061,205	7,761,276	11,634,818	924,117	24,157,581	47,184,885	82.7	9,876,320	4,944,436	3,616,137	3,369,188
	6 mos.	10,746	243,621,430	59,720,687	338,181,353	42,311,123	70,339,170	5,352,241	151,208,482	284,987,695	84.3	53,193,658	29,651,945	13,225,000	3,277,524
Pittsburgh & Lake Erie	June	223	3,075,781	106,833	3,330,367	392,132	788,212	55,345	1,136,705	2,519,934	75.7	810,433	630,199	778,001	411,644
	6 mos.	223	16,658,037	547,408	17,947,372	2,180,798	5,011,459	330,497	6,621,724	15,005,779	83.6	2,941,593	3,112,934	3,407,002	1,024,307
New York, Chicago & St. Louis	June	1,687	6,998,885	142,463	7,326,748	972,789	1,305,400	182,320	2,773,626	5,525,392	75.4	1,801,356	754,958	569,246	343,644
	6 mos.	1,687	43,377,966	717,612	45,188,224	5,501,312	7,311,295	1,079,621	17,029,849	32,607,174	72.2	12,581,050	4,977,219	5,031,723	1,792,510
New York, New Haven & Hartford	June	1,843	6,784,837	5,203,863	13,219,608	2,125,111	1,794,359	216,234	5,294,595	10,305,595	78.0	2,914,013	1,000,000	860,619	349,426
	6 mos.	1,839	42,494,841	26,733,779	76,565,538	11,463,447	11,199,568	1,421,489	32,836,200	62,311,539	81.4	14,253,999	5,525,000	2,560,572	—1,241,707
New York Connecting	June	21	165,907	.....	186,543	65,831	15,088	.....	54,889	138,239	74.1	48,304	56,251	65,027	61,994
	6 mos.	21	1,026,915	.....	1,142,586	339,179	106,900	.....	389,755	850,616	74.4	291,970	347,157	243,386	507,830
New York, Ontario & Western	June	547	641,791	19,955	722,291	135,769	125,107	25,404	332,901	647,771	89.7	74,520	50,828	—60,267	—165,279
	6 mos.	547	3,771,848	34,216	4,166,439	679,044	692,743	159,427	2,067,173	3,764,731	90.4	401,708	304,704	—437,186	—780,591
New York, Susquehanna & Western	June	120	296,982	37,554	347,682	33,327	43,546	4,467	138,203	239,245	68.8	108,436	36,864	42,421	—9,280
	6 mos.	120	1,700,901	237,817	2,043,132	217,712	248,220	28,723	861,440	1,475,332	72.2	567,800	201,353	176,920	7,386
Norfolk & Western	June	2,130	12,861,721	581,592	14,017,368	1,670,906	2,679,285	248,160	3,996,393	9,037,097	64.5	4,980,271	2,770,922	3,037,975	2,423,869
	6 mos.	2,130	75,380,277	3,168,131	81,388,023	9,872,401	15,670,371	1,346,169	23,597,394	52,951,820	65.1	28,436,203	15,864,345	17,416,513	9,375,256
Norfolk Southern	June	727	738,384	6,656	763,136	138,164	82,038	39,370	283,424	593,014	77.7	170,122	53,409	83,759	69,208
	6 mos.	727	4,108,490	28,425	4,265,522	935,299	470,164	243,514	1,627,122	3,533,617	82.8	731,905	317,665	189,620	—65,360
Northern Pacific	June	6,919	8,540,940	795,826	10,282,074	2,071,349	2,153,126	247,003	3,748,303	8,803,280	85.6	1,478,794	1,137,498	747,959	245,711
	6 mos.	6,920	56,671,662	3,531,622	65,448,786	11,641,055	13,012,127	1,355,291	23,990,794	53,503,994	81.8	11,944,792	7,642,952	7,513,705	2,589,231
Northwestern Pacific	June	331	499,015	10,857	533,468	109,731	62,219	3,388	236,926	421,263	79.0	112,205	35,784	44,299	—75,102
	6 mos.	331	3,049,548	54,313	3,222,542	637,378	387,995	23,286	1,417,995	2,529,627	78.5	692,915	220,085	272,856	—836,690
Oklahoma City-Ada-Atoka	June	132	56,982	.....	58,160	15,465	3,036	1,188	19,990	42,323	72.8	15,837	4,425	1,901	—5,929
	6 mos.	132	396,732	94	405,354	94,827	12,998	6,996	130,250	263,573	65.0	141,781	45,097	42,192	39,535
Pennsylvania	June	10,116	55,673,914	13,698,938	76,087,173	9,080,885	16,524,433	1,093,506	34,332,938	64,021,051	84.1	12,066,122	6,293,672	4,855,883	—1,501,647
	6 mos.	10,116	324,764,560	77,375,180	438,648,896	46,890,146	99,832,924	6,783,573	212,723,953	383,570,032	87.4	55,078,864	37,478,385	11,803,601	—6,285,186
Long Island	June	376	1,159,887	2,842,661	4,235,717	455,891	646,926	14,748	1,999,817	3,208,250	75.7	1,027,467	466,771	304,582	223,034
	6 mos.	376	6,836,108	13,483,126	21,691,026	2,908,627	3,726,515	159,278	12,158,880	19,424,410	89.6	2,266,616	2,812,842	—2,395,091	—810,311
Pennsylvania-Reading Seashore Lines	June	389	488,325	582,398	1,114,835	195,280	86,687	12,822	566,272	884,746	79.4	230,089	104,759	—16,991	—52,074
	6 mos.	389	2,794,401	1,882,156	4,884,136	1,124,985	697,472	59,578	3,154,762	5,192,197	106.3	—308,061	623,524	—1,644,567	—1,450,546
Pere Marquette		Included in Chesapeake & Ohio													
		Included in Chesapeake & Ohio													
Pittsburg & Shawmut	June	97	236,899	.....	237,457	58,655	29,613	2,977	62,542	162,293	68.3	75,164	7,706	53,178	30,172
	6 mos.	97	1,236,198	.....	1,241,284	194,676	180,702	22,614	349,276	792,279	63.8	449,005	42,458	354,176	71,704
Pittsburgh & West Virginia	June	136	620,229	.....	642,723	102,258	125,460	33,394	169,617	461,553	71.8	181,170	88,486	110,671	35,093
	6 mos.	136	3,108,616	13	3,237,492	523,984	670,287	201,437	833,727	2,414,490	74.6	823,002	441,911	570,604	54,038
Reading	June	1,358	8,232,721	651,038	9,436,012	1,390,003	1,772,619	110,195	3,517,267	7,044,079	74.7	2,391,933	1,322,417	1,124,815	347,060
	6 mos.	1,358	49,849,014	3,694,132	56,800,140	7,955,335	10,757,675	678,391	22,059,345	42,961,747	75.6	13,838,393	7,089,780	6,344,736	2,325,400
Richmond, Fredricksburg & Potomac	June	118	1,220,119	537,667	1,938,267	263,049	296,211	16,253	756,901	1,431,108	73.8	507,159	271,496	149,101	113,821
	6 mos.	118	7,577,702	3,588,842	12,469,504	1,266,924	1,675,495	101,391	4,893,858	8,648,244	69.4	3,821,260	1,838,407	1,482,422	1,475,004
Rutland	June	407	310,262	40,792	425,267	91,791	83,832	13,213	246,125	452,043	106.3	—26,776	34,514	—72,383	—60,733
	6 mos.	407	2,047,040	248,866	2,787,662	500,202	590,609	84,057	1,648,952	2,938,908	105.4	—151,246	226,185	—473,233	—257,381
St. Louis-San Francisco	June	4,645	7,328,976	536,019	8,471,409	1,248,982	1,368,852	199,782	3,595,078	6,763,157	79.8	1,708,252	885,741	786,121	594,717
	6 mos.	4,645	42,179,836	3,413,947	49,364,380	7,207,248	8,547,493	1,195,232	20,710,801	39,822,843	80.7	9,541,537	4,973,935	4,554,823	—696,729
St. Louis, San Francisco & Texas	June	160	284,298	9,176	307,644	44,933	32,203	13,543	164,607	264,488	86.0	43,156	12,825	1,190	2,587
	6 mos.	160	1,761,197	72,533	1,924,344	310,948	192,116	80,930	862,345	1,502,441	78.1	421,903	133,051	114,072	71,360

Table continued on second left-hand page.

10-YEAR RECORD OF

General Motors Diesel Switchers on the Boston and Maine

Locomotive Number	Month Delivered	H. P.	Location	Total Hours Worked	Average Hours Worked Per Mo.	Per Cent Availability
1103	8-36	600	Lawrence, Mass.	75,268	606	89.4
1104	8-36	"	Boston, Mass.	76,310	614	89.2
1105	8-36	"	Boston, Mass.	74,222	598	87.9
1106	7-38	"	Fitchburg, Mass.	64,683	637	91.9
1107	7-38	"	Fitchburg, Mass.	63,977	630	92.1
1108	7-38	"	Boston, Mass.	64,631	637	91.2
1109	11-39	"	Boston, Mass.	52,278	613	89.9
1110	11-39	"	Boston, Mass.	52,688	618	90.3
1111	11-39	"	Boston, Mass.	51,305	605	89.9
1112	11-41	"	Mechanicville, N. Y.	36,675	601	93.7
1113	11-41	"	Mechanicville, N. Y.	38,437	633	95.5
1114	10-46	"	Troy, N. Y.	1,131	514	98.5
1115	10-46	"	Boston, Mass.	1,305	621	95.7
1116	10-46	"	Boston, Mass.	1,153	607	94.6
1117	10-46	"	Boston, Mass.	1,217	641	93.4
1200	11-41	1000	Mechanicville, N. Y.	36,771	601	89.8
1201	11-41	"	Mechanicville, N. Y.	38,054	621	90.9
1202	7-42	"	Boston, Mass.	32,414	604	93.4
1203	7-42	"	Mechanicville, N. Y.	33,963	632	93.7
1204	7-42	"	Mechanicville, N. Y.	33,281	622	93.7
1205	9-46	"	Mechanicville, N. Y.	1,998	571	99.1
1206	9-46	"	Boston, Mass.	2,045	601	92.8
1207	9-46	"	Boston, Mass.	2,137	629	93.1
				835,943	616 (Av.)	91.0 (Av.)

GENERAL MOTORS
LOCOMOTIVES

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS — LA GRANGE, ILL.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1947—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income 1947	Net railway operating income 1946
St. Louis Southwestern Lines	June	1,575	$3,904,568	$68,015	$4,111,636	$557,407	$589,142	$121,294	$1,359,235	$2,771,587	67.4	$1,340,049	$412,602	$796,431	$531,862
	6 mos.	1,575	24,830,119	371,086	26,048,264	3,542,884	2,975,552	735,941	7,706,645	15,828,403	60.8	10,219,861	3,892,751	5,380,151	2,737,682
Seaboard Air Line	June	4,156	7,674,599	1,100,141	9,377,481	1,582,794	1,697,425	268,758	3,621,653	7,597,782	81.0	1,779,699	700,227	811,479	941,851
	6 mos.	4,156	49,253,650	9,091,629	62,883,098	10,102,979	10,545,482	1,615,700	24,379,539	49,700,252	79.0	13,182,846	5,409,585	5,520,299	5,918,814
Southern Railway	June	6,484	14,382,750	1,675,390	17,197,700	2,682,504	3,384,570	320,568	6,480,773	13,594,500	79.0	3,603,200	1,890,455	1,407,358	1,002,549
	6 mos.	6,484	93,284,217	10,059,388	110,708,335	16,468,982	20,128,328	1,959,756	42,146,190	85,111,787	76.9	25,596,548	12,354,587	10,872,591	8,035,357
Alabama Great Southern	June	316	1,064,296	105,716	1,240,122	216,239	318,963	28,494	454,363	1,066,409	86.0	173,713	174,581	52,806	37,758
	6 mos.	316	6,657,223	701,304	7,850,640	1,182,008	1,785,170	169,718	2,884,420	6,332,507	80.7	1,518,133	1,037,450	693,411	142,821
Cinn., New Orleans & Texas Pacific	June	337	2,446,908	165,268	2,738,116	346,222	586,098	57,525	815,717	1,898,332	69.3	839,784	485,612	446,053	290,130
	6 mos.	337	14,710,430	1,387,937	16,968,184	1,953,927	3,458,620	307,222	5,181,750	11,514,553	67.9	5,453,631	3,001,604	2,949,936	1,587,071
Georgia Southern & Florida	June	397	366,742	67,599	472,247	117,510	59,260	7,032	185,319	383,306	81.2	88,941	33,051	17,917	5,049
	6 mos.	397	2,277,702	575,241	3,111,032	605,378	362,760	42,695	1,193,478	2,310,712	74.3	800,320	295,787	280,696	159,981
New Orleans & Northeastern	June	204	700,522	66,255	809,632	133,219	92,810	17,338	219,405	496,058	61.3	313,574	130,799	140,693	5,867
	6 mos.	204	4,438,407	337,320	5,072,046	732,580	580,774	100,869	1,442,621	3,068,356	60.5	2,003,690	901,640	869,609	266,525
Southern Pacific	June	8,227	27,546,146	4,347,150	34,375,199	4,061,135	6,028,392	613,260	13,853,867	26,403,066	76.8	7,972,133	3,872,986	2,470,058	3,062,249
	6 mos.	8,228	160,456,855	24,686,276	200,026,036	23,646,610	35,502,936	3,791,064	79,335,347	153,642,633	76.8	46,383,403	23,761,083	15,091,976	11,217,085
Texas & New Orleans	June	4,320	7,287,110	1,021,161	8,881,091	1,080,189	1,273,088	180,852	3,294,616	6,251,945	70.4	2,629,146	1,120,560	1,074,447	1,096,093
	6 mos.	4,320	45,835,821	5,509,780	55,003,374	6,824,364	7,197,172	1,086,687	19,784,750	37,444,027	68.1	17,559,347	7,541,249	7,319,426	6,488,905
Spokane, Portland & Seattle	June	944	1,729,635	79,321	1,933,217	379,365	189,456	16,168	621,630	1,285,534	66.5	647,683	148,132	387,022	885
	6 mos.	944	9,404,608	361,862	10,472,761	2,248,646	1,269,948	104,846	3,817,768	7,906,110	75.5	2,566,651	948,327	904,516	—162,071
Tennessee Central	June	286	293,782	11,914	325,379	50,522	72,736	8,653	148,072	294,583	90.5	30,796	16,224	—12,714	—21,274
	6 mos.	286	1,918,364	51,263	2,098,189	361,570	424,424	56,095	927,543	1,860,033	88.6	238,156	128,369	—32,531	—48,647
Texas & Pacific	June	1,873	4,322,010	558,844	5,297,529	668,338	805,485	157,491	2,037,847	3,952,677	74.6	1,344,852	418,287	690,396	700,972
	6 mos.	1,873	23,604,347	2,737,112	28,814,160	3,846,809	4,471,493	922,002	10,945,458	21,903,140	76.0	6,911,020	2,210,348	3,620,388	3,962,124
Texas Mexican	June	162	165,898	98	196,548	48,266	17,217	4,737	73,554	158,283	80.5	38,265	62,712	—37,194	—48,389
	6 mos.	162	1,200,114	613	1,364,949	186,629	134,673	28,547	368,449	793,281	58.1	571,668	205,621	278,249	15,328
Toledo, Peoria & Western			Not yet filed												
			Not yet filed												
Union Pacific System	June	9,775	23,655,339	4,254,195	30,697,806	4,771,356	5,480,635	712,321	11,326,134	24,215,176	78.9	6,482,630	3,940,666	1,622,256	1,233,691
	6 mos.	9,775	149,091,317	21,776,837	185,579,063	25,277,503	32,109,627	4,328,831	67,070,679	139,679,828	75.3	45,899,235	24,815,265	15,600,511	11,025,761
Utah	June	111	155,695	.....	155,792	34,714	46,927	641	57,602	146,299	93.9	9,493	10,812	—931	14,943
	6 mos.	111	1,044,505	.....	1,044,871	159,041	276,546	3,847	381,012	859,786	82.3	185,085	112,757	70,171	9,316
Virginian	June	661	2,704,128	6,880	2,955,893	328,822	648,612	34,056	703,684	1,795,224	60.7	1,160,669	575,700	727,961	479,504
	6 mos.	661	17,339,725	32,755	18,423,990	1,847,134	3,915,343	207,701	4,235,710	10,650,216	57.8	7,773,774	3,692,700	4,789,601	2,048,758
Wabash	June	2,393	6,071,718	473,423	7,012,553	1,582,342	1,045,692	214,138	2,850,331	5,992,196	85.4	1,020,357	402,812	206,517	433,095
	6 mos.	2,393	40,422,125	2,584,891	45,941,251	6,599,605	6,200,014	1,306,042	17,679,946	33,455,532	72.8	12,485,719	4,816,994	5,279,472	2,962,425
Ann Arbor	June	294	553,132	6,563	583,892	119,899	121,320	20,458	247,806	524,769	89.9	59,123	31,017	9,641	5,656
	6 mos.	294	3,661,365	23,822	3,773,336	468,057	726,679	122,497	1,629,646	3,026,928	80.2	746,408	348,005	292,555	67,202
Western Maryland	June	837	3,457,537	16,436	3,628,456	556,385	604,291	58,550	1,082,067	2,409,567	66.4	1,218,889	500,000	739,947	563,647
	6 mos.	837	19,638,190	87,121	20,653,470	2,710,610	3,471,744	367,733	6,676,370	13,907,366	67.3	6,746,104	2,838,000	3,913,357	2,162,249
Western Pacific	June	1,195	2,582,926	252,779	2,931,892	544,014	434,918	122,408	1,159,305	2,427,220	82.8	504,672	216,164	225,013	165,065
	6 mos.	1,195	16,222,599	1,045,901	17,827,103	3,371,442	2,968,655	734,805	7,024,497	15,044,618	84.4	2,782,485	1,286,909	1,033,527	1,575,044
Wheeling & Lake Erie	June	505	2,368,824	5	2,483,175	405,361	339,271	54,622	780,853	1,655,632	66.7	827,543	473,530	527,950	255,990
	6 mos.	505	13,512,252	13	14,012,853	1,686,808	2,080,970	320,246	4,376,337	8,825,425	63.0	5,187,428	2,937,485	3,312,337	941,517
Wisconsin Central	June	1,051	2,002,374	57,867	2,209,237	294,920	276,945	49,994	816,337	1,513,782	68.5	695,455	352,788	265,986	180,501
	6 mos.	1,051	11,672,751	244,654	12,745,459	1,337,344	1,817,661	294,717	5,191,201	9,070,483	71.2	3,674,976	1,081,306	1,971,235	424,339

Per Diem Rate

(Continued from page 70)

serve the rules are due to reloading, by consignees, of cars they have made empty and billing of such loads to points not in the direction of the owning roads."

Among other things, the commission stated that (1) the present practice of largely disregarding the car service rules frequently results in the accumulation of box cars on individual roads and in districts which receive more freight tonnage than they originate, particularly on lines and in states east of Pittsburgh, Pa., and Buffalo, N. Y.; (2) as of March 1, box cars were scattered to such an extent that Class 1 roads had on their rails but 16.4 per cent of their own cars, but that an A.A.R. or commission order requiring immediate return of the cars, loaded or empty, to their home roads might result in the reduction of the aggregate volume of traffic handled; (3) the need for cars in the middle west has been so urgent in recent months to move corn having moisture content, and to transport wheat, that open-top cars have been used extensively; (4) many of the delays reported by shippers and others suggest a shortage of motive power, and, in some instances, a lack of personnel; and (5) the records of cars on line of eastern roads lend strong support to the charges emphasized by western shippers that some of the eastern carriers are alleviating car shortages on their lines by the use of box cars owned by other railroads.

After a review of the contentions of various agencies and shippers groups, including the Office of Defense Transportation, Department of Agriculture and the National Industrial Traffic League—none of which advocated the formulation and promulgation of service rules by the commission—the commission observed that the A.A.R. and the Class I roads declare that the distribution and utilization of the car supply lie at the heart of railroad operation.

"They perceive in the evidence of record no factual support for abolition of the present system of private management, and substitution of government control, over the handling and distribution of freight cars, and no evidence that more efficient use of the existing car supply would be accomplished through the promulgation of car service rules by us," the commission said. "They contend that the conditions complained of, if susceptible to relief at all by this commission, can be remedied by car service orders. They think that the promulgation by us of car service rules would result in the establishment of a budding bureaucracy, at variance with American traditions, and incompatible with the principle of private operation of the railroads."

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